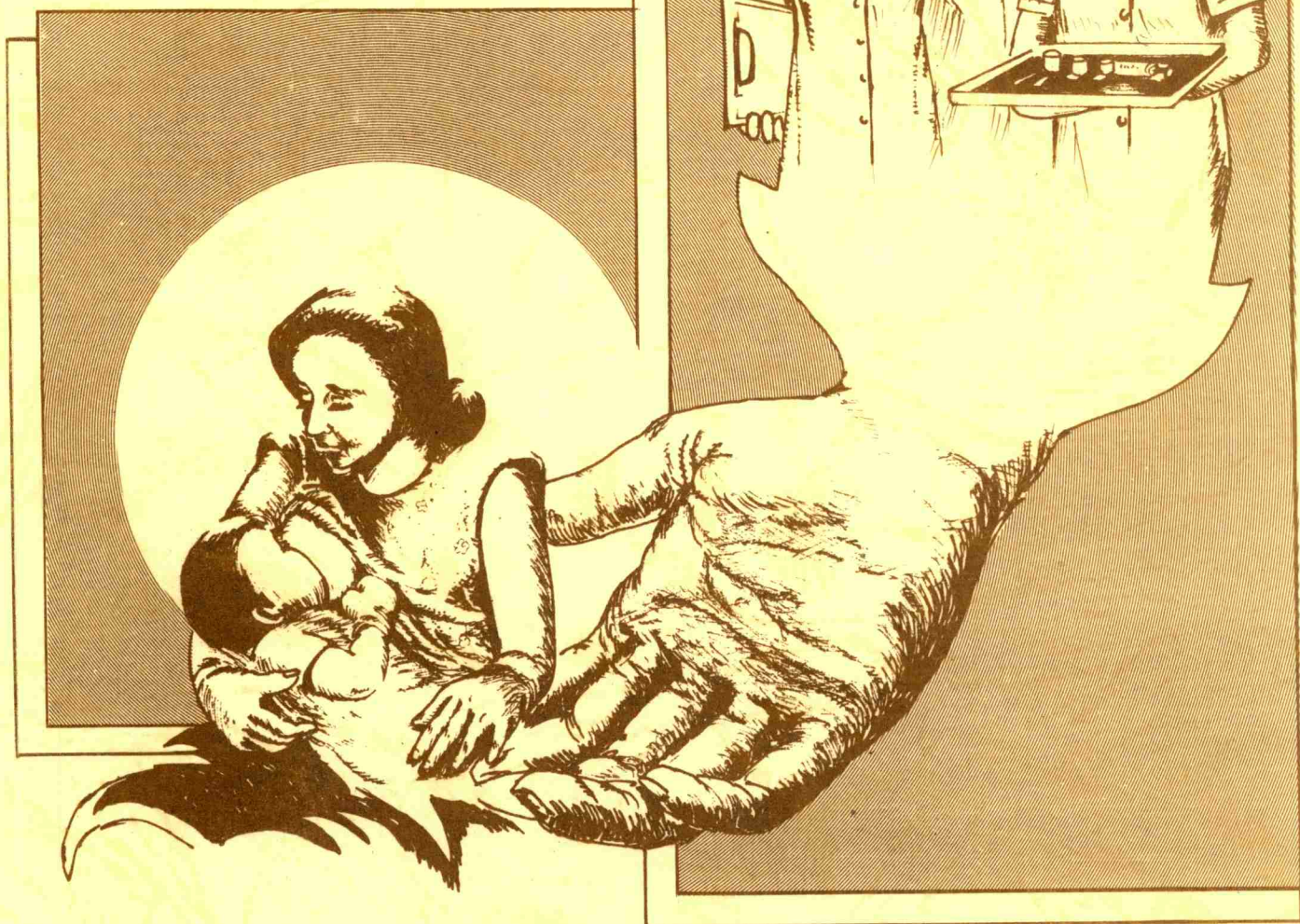
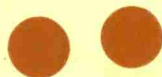


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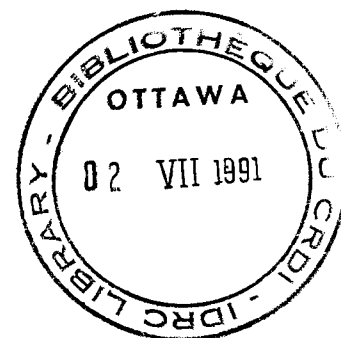


A Training Program Using a Prepared Instructional Manual on Breastfeeding Service Providers in Three Cities of Mindanao, Philippines

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**Final Report Submitted to
International Development Research Centre**

**A TRAINING PROGRAM USING A PREPARED INSTRUCTIONAL
MANUAL ON BREASTFEEDING FOR SERVICE
PROVIDERS IN THREE CITIES
OF MINDANAO, PHILIPPINES**



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Executive Summary

This project – “A Training Program Using a Prepared Instructional Manual on Breastfeeding for Service Providers in Three Cities of Mindanao” – was designed to impart and augment the breastfeeding education of health workers in the urban areas of Cotabato, Davao and Zamboanga. It was jointly developed by researchers based in Notre Dame University, Ateneo de Davao University and Western Mindanao State University and in coordination with the Department of Health units situated in the aforementioned places.

The same research proponents had undertaken a previous project aimed to motivate expectant working mothers to practice breastfeeding. The study entitled “An IEC Package for Promoting Breastfeeding in Three Cities of Mindanao” was published in May 1986. In this initial venture, the researchers realized the imperative need to direct attention and concern on the training of the service providers to effectively promote a program on breastfeeding.

The project comprised two major components – the development of a manual on breastfeeding and the formulation and conduct of a training-workshop on the use of the manual.

In the preparation of the manual, the research team reviewed and assessed the relevance and practicality of available instructional materials to the task of the service providers. The endeavour yielded a tentative list of common, rare and conflicting messages on breastfeeding. A baseline survey involving 60 service providers was likewise undertaken for the purpose of eliciting common misconceptions on breastfeeding. On the basis of the discussion of the findings and issues by a core group of nurses, midwives and community-based health workers, an outline of topics for the manual was prepared. Their output was further enriched by a focus group discussion participated in by the women with experience in breastfeeding. The writing was done by the research team with the help of technical consultants. The manual, however, took final shape after its blueprint was field tested by a group of 15 providers and subsequently revised.

A total of 222 health workers – nurses, midwives and CBHWs – were recruited from Cotabato, Davao and Zamboanga. These service providers were selected and randomly divided to constitute the experimental group (112) and the control group (110).

Only the experimental group participated in the orientation session and received copies of the manual. It also evaluated the manual and the training-workshop.

In general, the members of the experimental group were satisfied with the format of the manual. They found the cover acceptable, the prints readable and the paragraphs spaced in proper intervals. However, they suggested improvements like the use of colors and of more, bigger and lifelike illustrations. They also recommended that some of the illustrations be reproduced in poster form as a supplement to the manual.

The contents were described by the respondents as very useful, relevant and clear. They claimed that the manual provided them the means to solve problems on breastfeeding, understand the anatomy and physiology of the breast, and demonstrate milk expression to new mothers. But they proposed that the manual make provisions for more detailed discussions of the prolactin cycle, nutrition, medication, the simplification of technical terms, and the translation of the manual into the dialect.

The training workshop lasted for one whole day. It was evaluated in terms of objectives, usefulness, participation, and conduct of the plenary session.

Majority of the participants gave very high ratings to the clarity (67%) and relevance (72%) of the training's objectives to their jobs, needs and responsibilities as service providers. One-half (50%) of them concurred with the complete attainment of the objectives.

Similarly, they confirmed the workshop to be very useful in conveying breastfeeding concepts (77%) and in understanding health education strategies (55%).

More than one-half credited themselves with high rating in their participation in small group discussion (73%) and open forum (63%).

They (83%) also judged the plenary session to be very useful in understanding the manual.

The participants, however, commented on the brevity of the training-workshop. To have more time for lectures and discussions of the modules, they suggested a duration of 2-3 days. They also

brought up the need of the trainees for continuing education through regular meetings and updates on their experiences and problems in the promotion of breastfeeding and, considering the great influence of doctors on new mothers, for the former to be afforded a similar training-workshop.

To determine the effectiveness of the manual and the training on the knowledge, attitude and practice of the service providers in the promotion of breastfeeding, comparisons were made between the experimental group and the control group.

Three sets of interview schedules were administered using a one-to-one interview technique. Set A (Pre-test/0₁) was given to the experimental and the control group prior to the former's exposure to the manual and the training workshop. Set B (Post-test I/0₂) was administered to the experimental group only after the training. Except for the items on the evaluations of the training and the manual, the same set was also given to the control group. Set C (Post test II/0₃) was conducted 6 months after the training.

A comparison of the knowledge scores of both experimental and control groups based on the results of the three tests showed that the manual and the training-workshop significantly improved the knowledge on breastfeeding of the experimental group.

The pre-test results manifested practically the same level of attitude in the two groups. In the long run, however, the experimental group which had been exposed to the manual and the training-workshop disclosed a significant difference on the attitudinal level in contrast with that of the control group.

On the quality of practice, exposure to the manual and the training workshop enabled the experimental group to use more variations in strategies, topics and venues in the promotion of breastfeeding. The members also showed better ability and skill to deal with the problems posed by their clients as compared to the control group.

Thus, from the foregoing findings, it can be inferred that the manual and the training-workshop can spell a difference in the knowledge, attitude and practice of the service providers to make them more effective agents in the promotion of breastfeeding. To maximize the use of the manual and the training-workshop, however, it is suggested that the recommendations derived from this study be seriously considered and implemented.

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Chapter I

Introduction

A literature review conducted by Mayling Simpson-Herbert on infant feeding in the Philippines shows a slight decline in breastfeeding at birth among the urban poor and a stronger decline among the upper income group in the Philippines.¹

Among others, Mayling Simpson-Herbert reiterates findings contained in other studies on infant feeding choice in the Philippines, including incidence and duration of breastfeeding practice among urban mothers being affected by:

1. mother's employment outside the home (Butz et al: 1981; Popkin and Solon: 1976, Popkin: 1980);
2. mother's place of delivery (Population Reports: 1981);
3. influence of other people, including physicians (Pelto: 1981; Bryant; 1978; Butz, Nabicht and Da Vanzo: 1981); and
4. mother's knowledge about breastfeeding (Minikoff and Baer: 1980; Population Reports: 1981)²

Central to these findings is the relationship in the use of health care services and breastfeeding. The important role played by health personnel (doctors, midwives and community-based health workers) is often been cited as a factor influencing breastfeeding practice.

The vital contribution of health providers in promoting breastfeeding has also been noted by the research proponents in the course of implementing Project No. 3-P-83-0285: "Evaluation of an IEC Package Promoting Breastfeeding Among Urban Working Women in Three Cities of Mindanao, Philippines," supported by IDRC. The findings of this study disclose the following:

1. Some health service providers have insufficient knowledge of breastfeeding. A few doctors even remarked that while breastfeeding was not included in their course of study for the medical profession, a number of lecture hours and training were devoted to infant formula milk;
2. Various materials on breastfeeding with an assortment of instructions and emphases exist. However, there is lack of common suitable instructional material on breastfeeding for the use of health service providers.
3. Urban working mothers often cite "insufficient milk syndrome" as a reason for discontinuing breastfeeding thereby underscoring their need for professional advice, assurance and support from health service providers particularly during the period following pregnancy; and
4. There is lack of organized and conscious effort among service providers involved in maternal health and child care to promote breastfeeding among urban working mothers. Only those nurses and midwives with appreciable conviction of the benefits derived from breastfeeding motivated urban working mothers to practice breastfeeding.

A. Significance of the Problem and Justification

Various literatures allude to poverty as the main cause for the deficient maternal and health care in developing countries. (Mayling Simpson-Herbert: 1983; Claudia Sepulveda Alvarez: 1976; Kindlerberger and Henrick: 1977; Peter Hakim: 1979). Due to poverty, families live in primitive or overcrowded houses, and suffer from poor sanitation and inadequate diets. Children born in most developing countries, like the Philippines, have to contend with malnutrition, so that after 6 months even breastfed children are found to be afflicted with diseases at rates similar to bottlefed children. Since poverty could not be changed overnight, most governments have come up with programmes to alleviate the health conditions of mothers and their children.

In the Philippines, national programmes include health and nutrition/primary health care and family planning, with breastfeeding integrated as a component of the former. But the results remain unsatisfactory, because births are still closely spaced and breastfeeding is not properly encouraged and practiced in Filipino culture.

¹ Mayling Simpson-Herbert, "Infant Feeding in the Philippines 1955-1983 and Its Effect on Infant Health: A Literature Review" (Manila: Ateneo de Manila University, July 12, 1983), p. 19. (Draft).

² Ibid., p. 26.

Health personnel have often been mentioned as a significant factor influencing infant feeding behavior among urban working mothers. In the Philippines, they are partly responsible for the decline in breastfeeding practice.³ The cause is attributed to their lack of adequate information on breastfeeding. (Bernales: 1984; Population Center Foundation: 1983) This is sustained in the previously cited inadequacies in the effective promotion of breastfeeding by health service providers, as observed particularly in three cities of Mindanao, Philippines.

Various individuals, agencies and organizations are currently involved in providing maternal health and child care. But there seems to be a lack of consistency and conscious promotion of breastfeeding. Some government agencies issue messages that unconsciously foster infant formula milk as an acceptable alternative to breastfeeding. Some government personnel motivate and instruct mothers to breast-feed for a shorter duration – 4 months.

These inconsistencies may be partly attributed to the existence of varied materials that are (a) too limited in scope (e.g., emphasis is laid on the physiology of lactation and less attention to practical issues such as expressing and storing milk, preparation for breastfeeding, etc); (b) some materials are too technical in nature that these could only be understood by health workers with professional medical training; (c) attractive coloured brochures on breastfeeding distributed by milk companies with underlying messages on infant formula; and (d) inadequate orientation or training on breastfeeding.

In the interest of fulfilling the national goal of improving maternal health and child care especially in the socially depressed areas of Mindanao, it would be beneficial to focus breastfeeding educational programmes on the perceived credible sources of health information/education, namely: the nurses, midwives and community-based health workers.

Given the increasing number of urban women delivering in hospitals, the health service providers are in the best position to encourage mothers to breastfeed. This is premised, however, on the condition that they possess adequate knowledge and show a favorable attitude towards breastfeeding.

The effective transmission of the needed knowhow on breastfeeding may be achieved through a training program, the use of common instructional materials or manuals on breastfeeding among service providers, and a firm-up coordination among promoters of breastfeeding.

The envisioned training program using prepared instructional manual on breastfeeding for service providers ought to elicit the following contributions:

1. It must provide an opportunity for a representative group of service providers who, as end users of instructional materials on breastfeeding, can:
 - a) discuss and incorporate issues that are necessary to proper breastfeeding practice;
 - b) develop a common reference manual on breastfeeding to suit the needs of service providers;
 - c) check and dispel misconceptions or doubts on breastfeeding among service providers brought about by distorted messages; problems encountered in its promotion and the contradictory/disagreeable attributes experienced by clients/patients; and
 - d) interchange opinions based on actual experiences in health care delivery and deliberate on practical procedures for the proper promotion of breastfeeding.
2. With their personal involvement in the preparation of a common reference manual on breastfeeding, this chosen group of service providers must develop a strong commitment to actively and faithfully promote breast milk as specifically suitable for babies.
3. It should enable the filtering down of scientific information from competent sources – e.g., nurses, midwives and community-based health workers to the urban working mothers.
4. The participation of health service providers involved in the various crucial stages of motherhood like the pre-marriage counselors (Department of Health nurses) in the stage prior to pregnancy, the nurses or midwives in actual pregnancy, and midwives or community-based health workers in post-pregnancy should facilitate the needed follow-up in the promotion of breastfeeding.
5. It must foster the spirit of cooperation among service providers to ensure the integration and coordination of breastfeeding-related programmes and activities.

B. Background of the Study

This study on a training program using a prepared instructional manual for service providers evol-

³ E.H. Bernales. "Traditional and Modern Health Professionals and Breastfeeding in the Philippines." *Population Forum*, No. 1 (1984), 16.

ed from a previous study entitled "An Evaluation of an Information-Communication Package for Promoting Breastfeeding in Three Cities in Mindanao, Philippines." In the implementation of the said IEC study, the research proponents gathered impressions on the need to focus concern on breastfeeding service providers (nurses, midwives, and community-based health workers) — a task as essentially important as the clients.

Thus, researchers from three institutions of higher learning in Mindanao, namely: 1) Notre Dame University; 2) Ateneo de Davao University; and 3) Western Mindanao State University came up with this proposal to continue the program of promoting breastfeeding. In working out this second project, the 3 institutions coordinated with the Department of Health in their respective areas.

The Department of Health which is a cabinet rank office under the President is responsible for the health welfare of the Filipinos. It is headed by the Secretary of Health with its central office located in the Metro-Manila area.

To effectively promote programs at the grassroots level, Regional Offices headed each by a director have been established. All government health workers (doctors, nurses, midwives and lay volunteer workers) are directly responsible to the regional director in the implementation of the health programs. The health workers are assigned in government hospitals or clinics located in rural and urban barangays. Practitioners (nurses, midwives) in private clinics are also governed by the policies of the Department of Health.

Though the Department is primarily concerned with the health welfare of the people, it also coordinates with both government and private agencies in development-related activities.

C. Review of Current Knowledge

Current literatures on breastfeeding cite health care services as a determinant of breastfeeding, especially in developing countries.

It is postulated that the knowledge, attitude and practice of health workers relative to breastfeeding are among the factors that affect a mother's breastfeeding practice. (Huffman, Sandra: 1984; Popkin, Barry: 1983; Population Reports: 1975). Their influence on the mothers ranges from providing information to rendering support for the establishment of successful lactation.

Health personnel, however, are known to have lower rates of initiations and shorter durations of breastfeeding. In Thailand, a recommendation has been set forth that "health teams, community leaders, school teachers and wives of health team members should promote breastfeeding by education and example", ⁴ Likewise, Ms. Evelyn Hong observed that many health service providers only pay lip service to breastfeeding, for in the pre-natal visits most of them hardly ever discuss the problems and the benefits of breastfeeding with expectant mothers. ⁵

Meanwhile, the influence of the medical profession in promoting breastfeeding or bottlefeeding among Filipino mothers is described as unclear by Mayling Simpson-Herbert. She cites three studies which imply that women's knowledge about bottlefeeding emanates mostly from physicians. She also claims that if physicians were to withhold that information on bottlefeeding, a far smaller proportion of women might be induced to its practice. ⁶ For example, Peralta (1962) reports that the bottlefeeding women in her study attributed almost all of their knowledge of bottlefeeding and formula-making to physicians. Bulatao-Jayme (1965) also claims that in her survey 56% of those living in the provinces and 74% of those in urban areas were bottlefeeding under the advice and guidance of physicians and paramedical persons.

In a more direct manner, E.H. Bernales asserts that due to their lack of adequate information on breastfeeding, the traditional hilots and midwives are held partly responsible for the decline of the practice in the Philippines. ⁷

A focus group discussion research among urban low-income women in the Philippines (an IDRC — supported project), indicates that the place of delivery — either the home or the hospital — did not have any influence on the initiation of breast-feeding since mothers were able to breastfeed only 2-3 days

⁴ P. Khanjanastniti and S. Dhanamitta. "Summaries: Breastfeeding Practice and Growth of Infants in Thailand," *Journal of Paediatrics, Obstetrics and Gynecology*, Vol. 5 No. 3. (May/June 1979). 41.

⁵ Evelyns Hong. "Obstacles to Successful Breastfeeding," *Utusan Konsumer*. (December 1984), 12. *Evelyns*

⁶ Mayling Simpson-Herbert, "Infant Feeding in the Philippines 1955-1983 and Its Effects on Infant Health: A Literature Review" (Manila: Ateneo de Manila University, July 12, 1983), p. 32 (Draft).

⁷ E.H. Bernales, "Traditional and Modern Health Professionals and Breastfeeding in the Philippines: Population Forum No. 1, (1984), 16.

following delivery and after some other substance, e.g., ampalaya juice, glucose water was given to the baby.

This study infers the lack of information among mothers on the immunological properties of maternal milk and the benefits that can be derived by mother and infant from early introduction of breastfeeding.⁸

It also discloses certain misconceptions about breastfeeding. The collection of mother's milk for the purpose of feeding the baby later was unknown to them. They claimed that milk would turn to blood if left exposed to natural elements — a belief which was even corroborated by some doctors. Once more, this underscores the need for service providers to furnish mothers with scientific information on breastfeeding.

Similarly, the study conducted in the 3 cities of Mindanao, Philippines (Project No. 3-P-83-0285) reveals that out of 277 respondents, 152 mothers (55.9%) had received some information on breastfeeding prior to their visits to "recruitment centers" (hospitals, private clinics and barangay health centers). However, when asked about their sources of breastfeeding information, only 31.57 percent cited "doctors", 38.16 percent stated "nurses" and 8.55 percent mentioned traditional midwives or hilots. This finding signifies that very few health personnel provide scientific information on breastfeeding to mothers.

On the other hand, the observation that midwives and other health workers are inadequately informed about breastfeeding has been also noted in other studies. Surveys undertaken by Burgess, A.P.: 1980; Hamilton, D. and Popkin, B.M.: 1980; and Liebrich, U.: 1977, attest that health professionals are often misinformed about breastfeeding. This observation appeared as early as 1975 in an issue of Population Report:

" . . . First, physicians, nurses and other health personnel are not adequately educated or trained to advise women on the advantages and techniques of breastfeeding. As a result their attitudes towards breastfeeding are often negative and can present insurmountable barriers to a mother who wants to nurse her child."⁹

Sandra Huffman also affirms the unfamiliarity of health professionals (especially in hospitals) about the benefits of breastfeeding. Based on WHO/UNICEF (1981) literature, health professionals who consider infant formula to be equal, if not superior to breastmilk, also influence the mother's view of the adequacy of her breastmilk. The attitudes and beliefs manifested by these professionals adversely affect the knowledge and attitudes of women who receive pre-natal care.¹⁰

Institutionally, the attitudes and behavior of health workers produce a significant impact on breastfeeding performance. This includes the limited use of supplemental bottles and appropriate information given to mothers in the pre-natal and post-natal periods. (Population Reports: 1981)

Deborah Jean Hales reiterates that a number of recent studies suggest re-evaluation of present hospital policies and procedures in the pre-natal period.¹¹ Edward C. Baer re-states this . . . "specific steps can enhance the incidence and duration of breastfeeding substantially in the hospital setting. These includes provision of information and support to women and the revision of hospital routines."¹²

To effectively promote breastfeeding, both supply and demand interventions have to be used and should include health workers, individually and institutionally. This must extend to the areas of medical training, public education and community mobilization. Cases exemplifying such interventions are mentioned by Edward Baer:

1. In Canada, a national campaign has been launched to promote breastfeeding. Thousands of educational packets were distributed to health workers to impart practical information and motivation. The health workers were likewise urged by the Minister of Health to cooperate with such lay groups as the La League in promoting breastfeeding.

⁸ *Kabalikat ng Pamilyang Pilipino Foundation, Inc., and PIACT/PATH. Breastfeeding/Child Survival: Philippines. (IDRC Ref. No. 33P-83-0102-02: June 1985), p. 4. (Progress Report).*

⁹ *Robert Buchanan. "Breastfeeding — Aid to Infant Health and Fertility Control," Population Report, J. No. 4 (July, 1975), p. 55*

¹⁰ *Sandra L. Huffman, "Determinants of Breastfeeding in Developing Countries: Overview and Policy Implications." Studies in Family Planning, XV, No. 4 (July/August, 1987), 175.*

¹¹ *Deborah Jean Hales, "Promoting Breastfeeding Strategies for Changing Hospital Policy," Studies in Family Planning, No. 4 (April, 1981), 61.*

¹² *Edward C. Baer, "Promoting Breastfeeding: A National Responsibility," Studies in Family Planning, XII, No. 4 (April, 1981), 194.*

2. In Nicaragua, breastfeeding promotion is integrated into the overall maternal and child health programmes and goals. As a subprogramme, breastfeeding promotion is carried out by various government ministries and lay or mass organizations such as the Association of Nicaraguan Women, Rural Workers Federation and Sandinista Youth.¹³

Other interventions used in developed countries include information and support. Substantial increases in breastfeeding can be achieved through the education of health professionals and fathers and proper use of the mass media. (Winikoff and Baer: 1980).

In a study on the influence of a pediatric staff opinion on the pattern of infant feeding conducted by Sloper, McKean, and Baum, it was found out that a significantly large proportion of mothers were breastfeeding even after discharge when the pediatric staff discontinued giving complementary bottle feeds to babies. The pediatric staff's opinion about breastfeeding changed after attending a seminar on the advantages of human milk.¹⁴

A program to promote breastfeeding was implemented in Campinas, Sao Paulo, Brazil. Prior to its launching, a short training course (consisting of a lecture-discussion on breastfeeding conducted by a pediatrician) was given to nurses, auxiliary nurses, and support personnel. In evaluating the results of the program, the following came out: (a) health workers can be motivated to assume responsibility for undertaking the proper education of lactating mothers, creating an appropriate environment, and helping mother and child to adapt to each other; and (b) the cooperation of health workers can lead to a significant improvement in breastfeeding.¹⁵

Roberts and Taylor note that when the nurse is skilled in managing discussion and adequately prepared with factual material and teaching aids, good results can be obtained in group discussions designed to teach lactation to mothers. To ensure continuity of advice and methods, they advocate the use of in-service training sessions, standardized manuals of procedures, and printed instructions for the new breastfeeding mother.¹⁶

These steps are aimed at educating both the health professionals and the mothers through methods that can assure the latter with consistent advice. They maintain that even contradictory information is better than imparting nothing at all.

In the study on breastfeeding conducted in the 3 cities of Mindanao, Philippines, the nurses and midwives who attended a 3-day lecture-discussion on the subject obtained a significant increase in their knowledge scores (t-value = 3.33; significant at .05 and .01 levels). This shows the need and feasibility of providing an educational program for health personnel.

In summary, various studies uphold the vital role of traditional and modern health workers, both individually and institutionally, in the successful promotion of breastfeeding. However, the inadequate information of health workers about breastfeeding emerged as a serious barrier in propagating its practice.

Breastfeeding educational programmes have been designed, but these are mostly geared to changing the knowledge and attitudes of mothers. On the other hand, a few attempts have been made to apply such concern to service providers. For the latter, educational programmes have been confined only to seminars. The endeavor to reinforce the training with the use of common instructional materials on breastfeeding for service providers is quite limited. Thus, it is useful to develop a manual on breastfeeding for the use of nurses, midwives, and community-based health workers.

The provision of a common manual on breastfeeding for service providers will furnish the concerned health personnel with uniform information and thereby prevent distortion of messages. The newly-employed members of the health staff can learn about breastfeeding through training by using the manual as ready reference. It can also be useful in dealing with practical problems associated with breastfeeding, because it will contain inputs from a group of service providers with experience in breastfeeding promotion.

Three important considerations may be discovered from the foregoing literature review, namely: the need to upgrade the knowledge and later the opinion of service providers on breastfeeding; the development of educational packets or instructional materials for the use of service providers; and the ap-

¹³ *OP cit.*

¹⁴ Ellen E. Hardy, Ana M. Vicni, Regina C. Sarmiento, Lucila R. Moreira, and Cecilia M. Bosquero, "Breastfeeding Promotion: Effect of an Educational Program in Brazil," *Studies in Family Planning*, XII, No. 3 (March, 1982). 79.

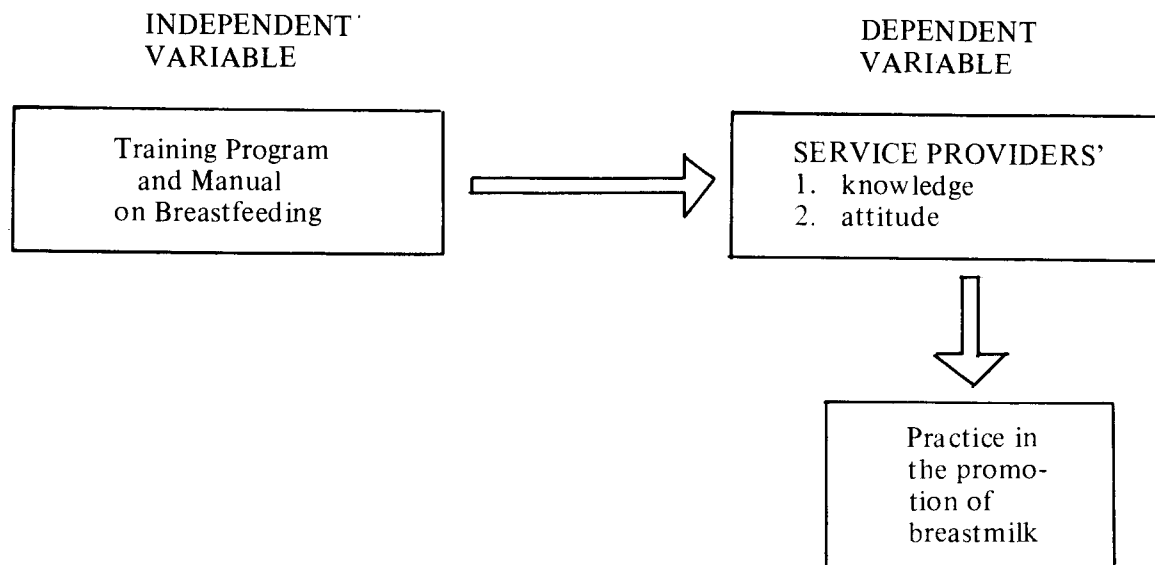
¹⁵ *OP cit.*

¹⁶ Bonnie S. Worthington-Roberts and Lynda E. Taylor. "Guidance for Lactating Mothers," *Nutrition in Pregnancy and Lactation* (St. Louis: The C.V. Mosby Company, 1981), p. 200.

plicability of strengthening coordination among individuals in the private and government sectors who are involved in breastfeeding.

D. Conceptual Scheme and Working Definitions

To pursue the endeavor of providing breastfeeding education to service providers through a training program and use of prepared manual, the following conceptual framework is evolved:



The diagram shows that the training program using a prepared instructional manual (independent variable) for service providers (nurses, midwives and community-based workers) will be used in order to create favorable knowledge and attitude towards breastfeeding among service providers. This is based on previous studies which cite the substantial increase in breastfeeding when health professionals were provided with education on breastfeeding.

It also shows that the service providers' knowledge and attitudes toward breastfeeding affect their practice in the promotion of breastfeeding among urban mothers. Deborah Jean Hales declares . . . "in addition, the attitudes and behavior of health workers, both individually and institutionally, can have significant impact on breastfeeding performance, specifically through breastfeeding educational and support programs." (Studies in Family Planning: 1981)

The first two variables are described by Sandra Huffman as . . . "activities of health professionals may in part be affected not only by inadequate training but also by promotional practices of the infant formula industry." (Studies in Family Planning: 1984)

1. **Service Providers** – government and non-government health workers:
 - (a) nurses – those with 4 years of nursing education after high school;
 - (b) midwives – those with an average of 2 years midwifery education after high school; and
 - (c) community-based health workers – those with an average of 6 months training in health education and health care after high school. They are involved in the delivery of health services for mothers before pregnancy (as pre-marriage counselors), during pregnancy and after pregnancy.
2. **Knowledge** – scientific information on breastfeeding among service providers which is measured through an objective-type test administered to them before and after the application of the intervention.
3. **Attitude** – favorable or unfavorable disposition towards breastfeeding and its promotion among urban mothers which is measured through a structured attitudinal scale (Likert-type) administered to the service providers before and after the application of the intervention.
4. **Prepared Instructional Manual on Breastfeeding** – a set of textual materials for service providers which contains scientific information on breastfeeding. It will be developed by a representative group of service providers (Core Group) and as an intervention, its effect will be tested through the gains in knowledge, and attitude and practice on breastfeeding among service providers.

5. **Training Program on Breastfeeding** – a one-day training involving group discussions on breastfeeding and role-playing and small group discussion on communication strategies will be conducted.
6. **Practice in the promotion of breastfeeding** – the favorable or unfavorable attitude of service providers towards encouraging urban mothers to practice breastfeeding which is measured through their decision to provide breastfeeding information to urban mothers.

E. Objectives of the Study

The study attempts to determine the effect of a training program using a prepared instructional manual on the knowledge, attitude and practice in promoting breastfeeding among service providers in the cities of Cotabato, Davao and Zamboanga.

Specifically, it aims to do the following:

1. develop and evaluate a manual on breastfeeding for the use of health service providers;
2. conduct a training program for health service providers; and
3. evaluate the effects of the manual and training program on the knowledge, attitude and practice in the promotion of breastfeeding among service providers.

F. Significance of the Study

(Regional, National and Local Policy Implications Related to the Study's Results)

With the indication obtained from the review of related literature that most breastfeeding educational programmes and studies focus on the clients or mothers, the study can provide additional data on breastfeeding promotion from the service providers' end.

The additional data on service providers can be utilized, along with available data on the clients, to provide a more integral information for the development or planning of maternal health and child care programmers.

This information may be useful to other Asian countries experiencing a similar decline in breastfeeding practice as a result of urbanization or modernization.

In the national and local levels, this information may likewise be used by policy-makers in the planning and implementation of health care services for mothers. If found effective, the manual may be reproduced and recommended for the utilization of service providers in both government and private institutions, individual health practitioners, and neighborhood service providers – midwives and community-based health workers.

Lastly, in the city level, the study involving the use of a common manual for service providers complemented by a training on its content and use may encourage the service providers to actively promote breastfeeding and to participate in the programme activities of an organized body known as the "core group" in each of the 3 cities. In Davao, this is composed of 1 nurse, 2 CBHW, and 2 midwives; in Zamboanga: 1 doctor, 2 midwives, and 2 CBHW; and in Cotabato: 2 doctors, 1 midwife, 2 nurses, and 1 CBHW. This body brings into partnership the community organizations that share the government's goal for development through health and nutrition.

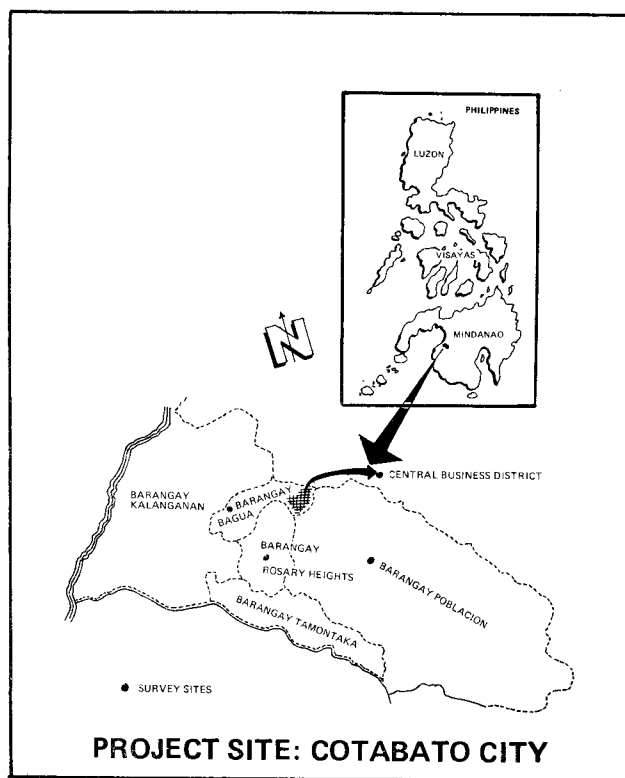
G. Research Methodology and Procedure

G.1. Locale of the Study

1. Cotabato City

Cotabato City is 555 statute miles from the national capital, Manila. It can easily be reached by jet flight for about 90 minutes. The city has an area of 17,599 hectares. As of May 1980, its population stood at 83,871 with a density of 476 per square kilometer. Most of the inhabitants are concentrated in the poblacion or downtown area.

It has 4 hospitals with a total bed capacity of 425. These are served by 40 doctors, 78 nurses, and 55 midwives.

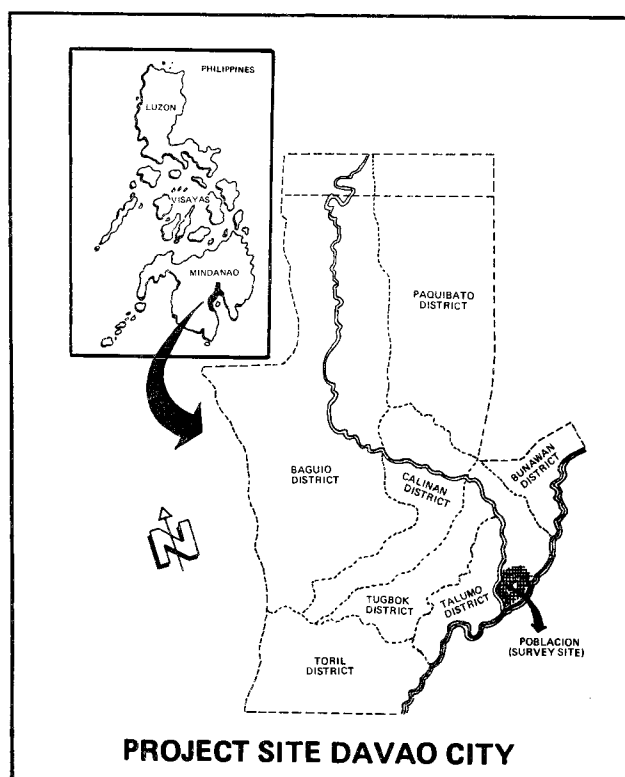


2. Davao City

Approximately 946 aerial kilometers or 528 statute miles southwest of Manila, lies Davao, a premier city of Mindanao. This fast-growing commercial center in Southern Philippines is just an hour and a half by jet from Manila.

The poblacion district which comprises 40 barangays with 24,368 households has a land area of 1,018.3 hectares. Based on the 1984 census which listed the total population as 131,071 the density is computed at 127 per hectare.

The area is serviced by 7 hospitals — 1 public and 6 private. The former has a bed capacity of 350, while the latter has 775. On the other hand, the 50 private medical clinics have a total bed capacity of 666. The district also includes 32 barangay health stations, 60 nutrition centers, 44 family planning units, and 60 day care centers.



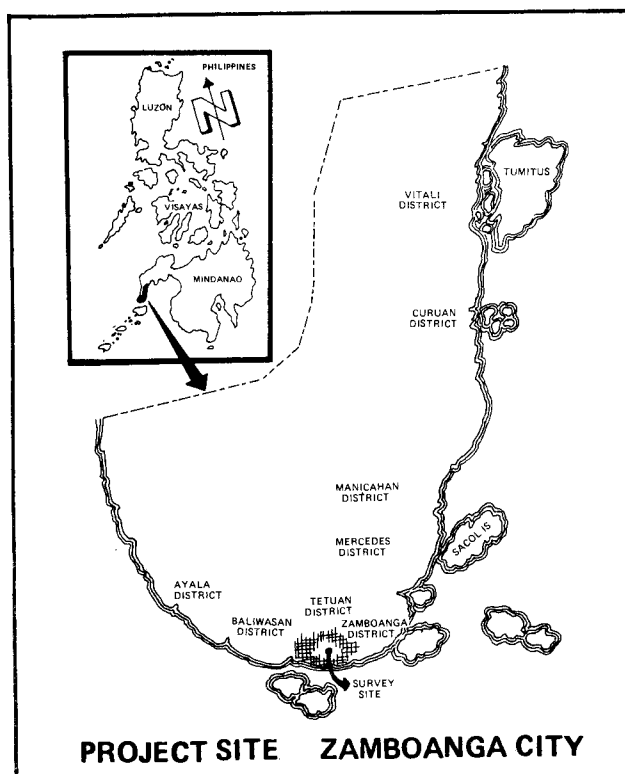
As to health manpower, the 6 private hospitals have an aggregate complement of 27 physicians, 30 nurses, 30 midwives, and 7 nutritionists. The public hospital is served by a staff of 67 physicians, 300 nurses, 280 midwives, and 30 nutritionists. The other health facilities are attended by 16 physicians, 33 nurses, and 24 midwives.

3. Zamboanga City

Zamboanga City is located in the north-western portion of Mindanao. It is 521 statute miles from Manila.

Based on the 1980 census, the population of the city is listed at 343,722. Its population density is 243 per hectare.

The city is serviced by 5 hospitals – 1 public and 4 private – with a total bed capacity of 890. The city is served by 106 doctors, 179 nurses and 84 midwives.



G.2. Sampling Procedure

A list of service providers was prepared for each of the research area. The lists* included the following:

	Cotabato	Davao	Zamboanga	Total
Nurses	10	11	106	127
Midwives	18	15	79	112
Community-Based Health Workers	155	195	84	434
	183	221	269	673

From these lists, a random sample of 222 respondents were drawn to constitute the experimental and control groups.

The distribution of the sample is as follows:

	Cotabato		Davao		Zamboanga		Total	
	Exp.	Ctrl	Exp	Ctrl	Exp	Ctrl	Exp	Ctrl
Nurses	2	0	4	3	15	13	21	16
Midwives	2	1	5	1	6	11	13	13
CBHWs	22	24	44	51	10	8	76	83
	26	25	53	54	31	32	110	112

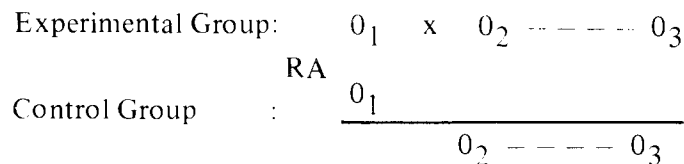
* The list included only health service providers involved in the promotion of breastfeeding.

G.3. Research Design

1. The experimental research design was used in the study. This was done to determine the effects of the training program using the prepared instructional manual in changing the service provider's knowledge, attitude and practice in promoting breastfeeding.

2. The sample of 222 service providers was randomly divided into experimental and control groups. The former participated in the breastfeeding orientation session and each received a corresponding manual, while the latter group was not included in the orientation session and didn't receive a manual.

The research design is diagrammed as follows:



where: RA – random assignment of service providers to the experimental group and the control group;

0_1 – pre-test on knowledge of breastfeeding, attitudes towards breastfeeding and practice in promoting breastfeeding,

x – Training program using prepared instructional material

0_2 -- post-test I on knowledge, attitude and intention to promote breastfeeding

----- -- six (6) months period for practice (i.e., use of the manual)

0_3 – post-test II on the knowledge, attitude and practice of promoting breastfeeding (6 months after the introduction of the manual) among experimental and control groups of service providers; focus group discussion among experimental group of service providers.

G.4. Instrumentation

1. Three sets of interview schedules were prepared and administered using a one-to-one interview technique. The interview schedules were translated in Filipino and Bisayan for better understanding.

1.1 Set A (Pre-test or 0_1) was administered to both groups before experimental group was exposed to the training program. It contained questions related to the following variable:

BLOCK 0 Social Background – Type of practice as health personnel; nature of professional training; previous training on breastfeeding; knowledge and attitude toward breast-milk substitute; and length of experience in promoting breastfeeding.

BLOCK A Knowledge of breastfeeding

BLOCK B – Attitude towards breastfeeding

BLOCK C -- Competence to promote breastfeeding

BLOCK D -- Practice in promoting breastfeeding

1.2 Set B (Post-test I or 0_2) was given after the training only among members of the experimental group. This included (a) knowledge, attitude and intention to promote breastfeeding (b) evaluation of the training and (c) evaluation of the manual.

Set B was administered to the control group excluding the items on the evaluations of the training and the manual.

The results of Post-test I were used to determine the effects of the training program on the knowledge, attitude and intention to promote breastfeeding.

1.3 Set C (Post-test II or 0_3) was conducted 6 months after the training session. It is a repeated measurement observation similar to the time series design. It was used to note whether there is a steady constant favorable change in the knowledge and attitude of service providers toward breastfeeding over time. This would check whether the change in knowledge and attitude between the period: pre-test and Post-test I is constant as the period Post-test I and Post-test II (6 months after the introduction of the common manual).

Primarily, Set C also indicated whether change in knowledge and attitude among

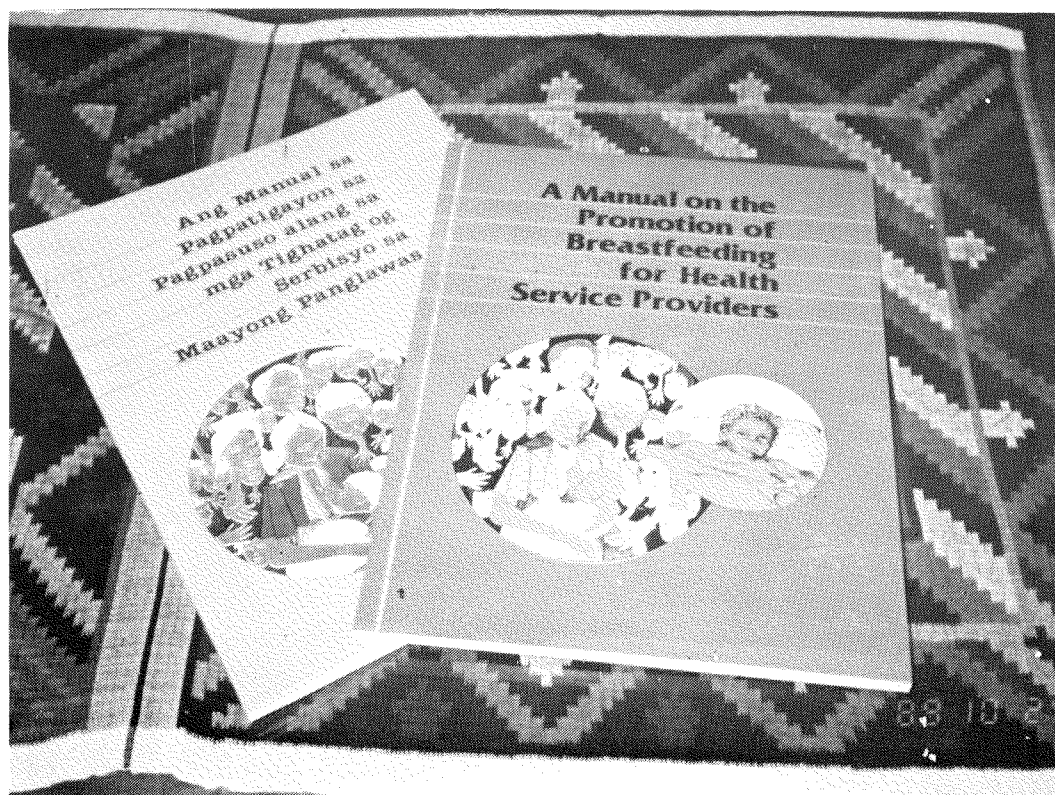
service providers influenced their practice in promoting breastfeeding among urban mothers. Thus, a 6-month observation period was allotted in the promotion of breastfeeding.

2. Focus group discussions among the members of the experimental group were conducted in the three study areas in order to supplement the survey data.
3. Monthly monitoring was also done among the members of the experimental and control groups. A monitoring form was completed by each respondent which included data such as activities conducted, instructions/services given, etc.

Chapter II

Project Description

The entire research project consisted of two major components — the development of a breastfeeding manual and the designing of a training-workshop. The breastfeeding manual had to be developed first since this was the primary instructional material to be used in conducting the training-workshop for the health service providers included in the sample.



A The Breastfeeding Manual

The development of the breastfeeding manual started with intensive and extensive review and assessment of available instructional materials and literature relevant for the use of service providers. To achieve this, the research team collected from within the three regions (9, 11, and 12) and also from national services, a total of fifty-four (54) brochures, leaflets, articles on breastfeeding and manuals on Primary Health Care. From all these sources of information, the research team tentatively came up with a list of common, rare and conflicting messages.

The information derived from the review of literature was supplemented by data gathered through a baseline survey among 60 health service providers and which was primarily intended to elicit common misconceptions on breastfeeding.

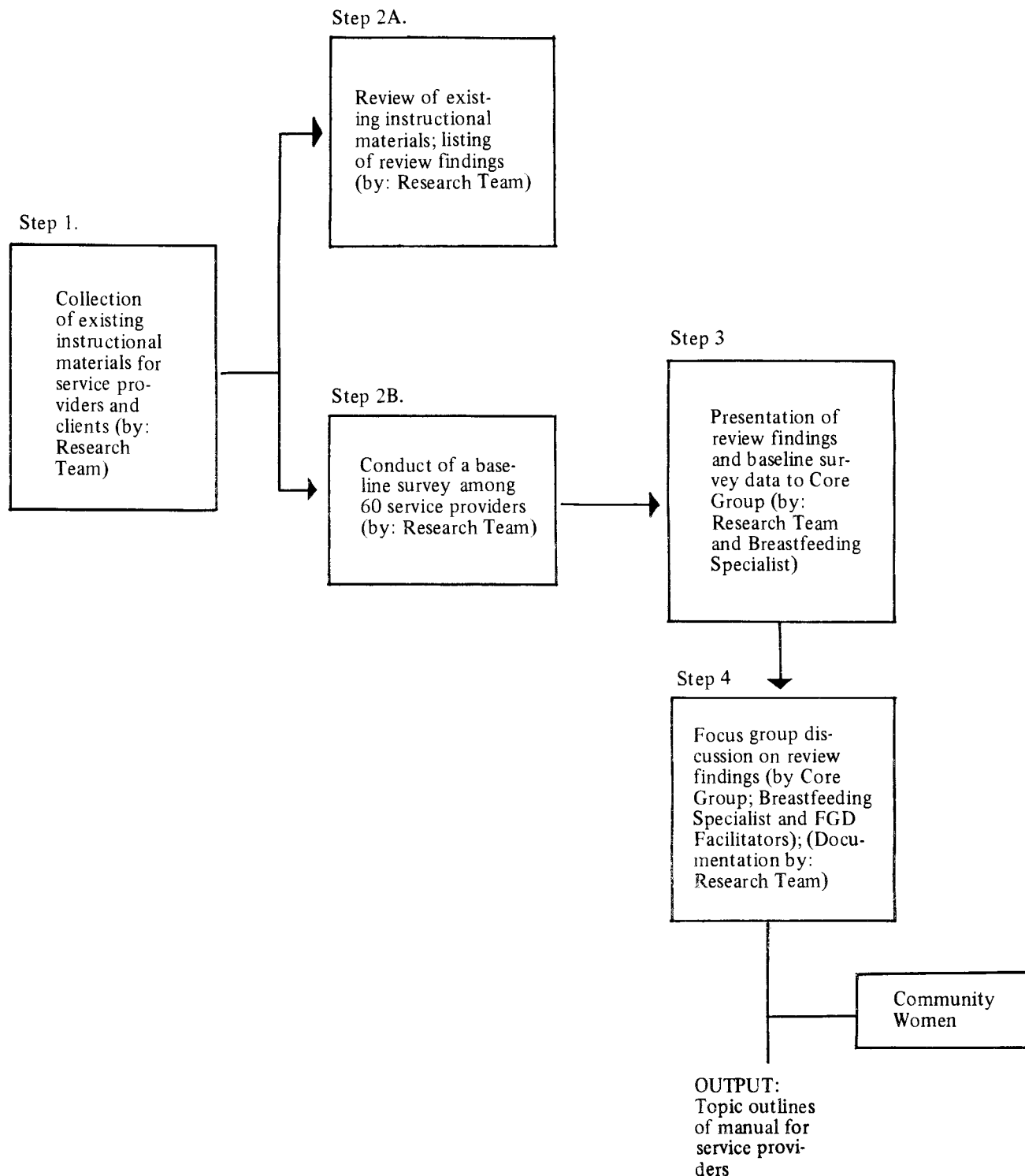
After having compiled a sufficient quantity of information and baseline data, the research team convened and discussed the findings and synthesized the issues involved. These findings were later on presented to a core group of service providers, the purpose of which was to ultimately come up with the outline of the topics to be included in the manual. This list was further enriched through the conduct of a focus group discussion participated in by women with breastfeeding experience.

The Core Group composed of doctors, nurses, midwives, and community-based health workers took charge of finalizing the topics, issues, and common instructional materials to be included in the breastfeeding manual.



The entire procedure used in the development of the breastfeeding manual is graphically presented below. (See flow chart)

Flowchart of Processes involved in the Review and Assessment of Existing Instructional Materials on Breastfeeding (Research Objectives No. 1)



Among the tasks performed by the research team were writing the text of the manual with the assistance of consultants from the National Teachers Training Center, University of the Philippines; reviewing the designs and illustrations prepared by a hired professional; editing the content of the manual under the guidance of a specialist on breastfeeding; preparing a proto-type or blueprint of the

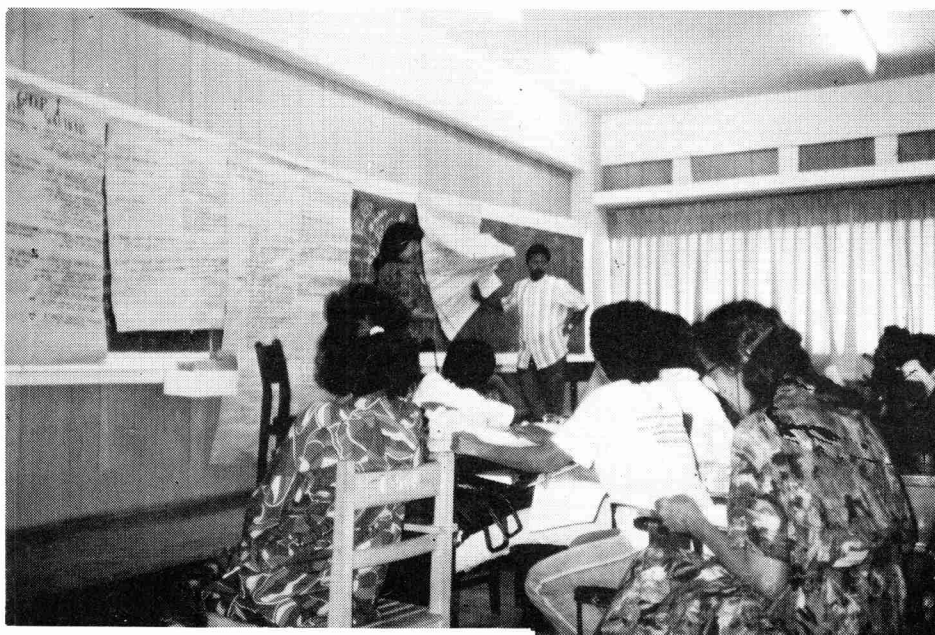
manual; fieldtesting the blue-print of the manual among a group of service providers; and finally producing the revised manual for distribution to members of the experimental group.

B. The Training

A one-day training-workshop using the prepared instructional manual was conducted in each research area among the identified health service providers of the experimental group.

The objectives of the training-workshop were: a) to identify common problems in the promotion of breastfeeding; b) suggest ways in which the manual can be used to solve these problems; and c) apply a selected strategy in promoting breastfeeding using the manual as a guide.

To achieve the objectives, the following activities were undertaken: a) the training participants were first divided into small groups in Workshop I where they identified common problems in the promotion of breastfeeding and discussed how the manual can be used to solve these common problems. The results of the discussion in the small groups were then presented for interaction in a plenary session in the presence of the invited consultants from the National Teachers Training Center of the University of the Philippines and the breastfeeding specialist in the area. The questions raised by the participants were entertained and answered by the consultants; b) In the second workshop, each small group was asked to select one problem and the appropriate strategy which can be used by the health worker when confronted with such problem. This was presented through role plays in a plenary session. After all groups presented their role plays, the participants were asked to react and comment on the demonstration.



Chapter III

Research Results

A. 1. Personal Characteristics

The survey of experimental and control groups included the personal characteristics of the respondents.

Respondents in the control group were slightly older (Mean = 40.14) than the experimental group (Mean = 37.39). While 44.7% of the control group were 41 years old or more, only 32.5% of the experimental group belonged to the same age group. In both groups, respondents from Davao were the oldest, while those from Cotabato were the youngest. No respondent from Cotabato was more than 50 years old in the experimental group nor more than 60 years old in the control group. On the other hand, no respondent from Davao was below 21 years old in the control group and no respondent from Zamboanga, experimental and control, was in the same age group. (Appendix IA and Figure 1)

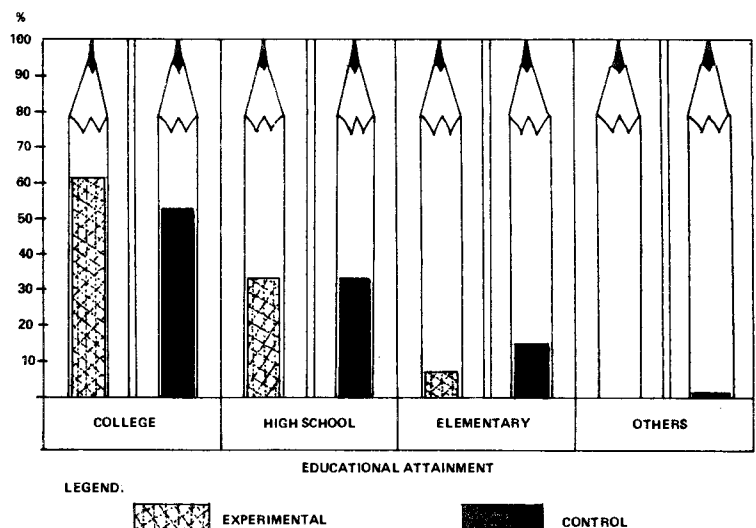
The distribution of respondent by civil status, religion and educational attainment are shown in appendix 1A

More than 3/4 of the respondents in both experimental and (75.9%) and control groups (78.6%) were married. Cotabato registered the biggest percentage of married respondents, 80.88% in the experimental and 84% in the control group. Those who were separated from their spouses comprised the smallest group, i. e., 5 from the control group (3 from Davao and 2 from Zamboanga) and 1 from the experimental (Davao). The same pattern of distribution in civil status exists in all areas in both experimental and control groups.

As a whole, more than 80% of the respondents were Catholics, i. e., 80.2% in the experimental group and 85.7% in the control group. By area, Davao had the biggest percentage of Catholics (90.7% and 92.7% in the experimental and control group, respectively) and Cotabato had the least (57.7% in the experimental and 64% control group). The least popular was the Protestant religion (6.3% in the experimental and 3.6% in the control). Cotabato had no Protestant respondent in both experimental and control groups.

Respondents who were in the college level comprised 60.70% of the experimental and 52.7% of the control group. Thus, the experimental group had relatively more highly educated respondents than the control group. Those with elementary education only comprised the smallest groups, 7.1% in the experimental and 14.3% in the control group. (Figure 1).

FIGURE 1: EDUCATIONAL ATTAINMENT OF HEALTH WORKERS.

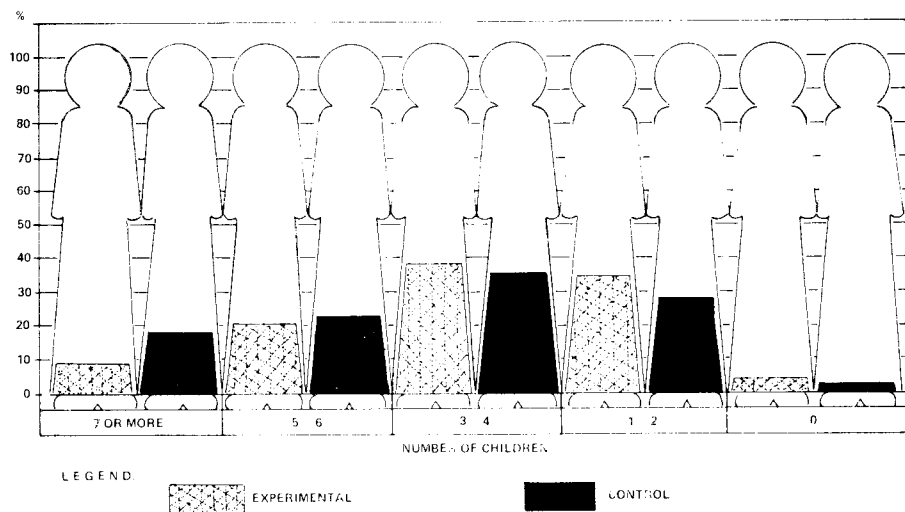


By area, Zamboanga had the biggest proportion of college level respondents (74.2% and 81.3% in the experimental and control groups respectively) and Davao had the least (47.3% of the experimental and 40% of the control). No respondent was below the high school level in the experimental group of Cotabato and control group of Zamboanga. Thus, Zamboanga had relatively the most number of highly educated respondents and Davao had the least in both experimental and control groups.

The respondents' number of children and their ethnic origin are shown in Appendix 1A.

In both experimental and control groups, the distribution of respondents by number of children was negatively skewed, i. e., there were more respondents with few children. Majority (74.0% of the experimental and 64% of the control) had at most 4 children. Among the 3 areas, Zamboanga had the biggest percentage with not more than 2 children (48.1% of the experimental and 51.9% of the control) and Davao had the least (27.9% of the experimental and 15.7% of the control). Zamboanga respondents had more small families than either Davao or Cotabato in both experimental and control groups. (Figure 2).

FIGURE 2: PERCENTAGE DISTRIBUTION OF RESPONDENTS ACCORDING TO NUMBER OF CHILDREN.



The most common ethnic origin in the experimental and control groups was Cebuano (36.6% and 49.5% respectively). Zamboangueno was the second most popular (25.9% of the experimental and 20.8% of the control) and Tausog the least popular (.9% of the experimental and 1% of the control).

By area, Davao respondents were the most homogenous group, being predominantly Cebuano (60% and 84.1% of the experimental and control groups respectively).

Respondents from Zamboanga were largely Zamboanguenos (71% and 65.6% of the experimental and control groups respectively). Cotabato respondents were the most heterogenous in ethnic origin. The experimental group had almost the same percentage of Zamboanguenos (26.9%) and Maguindanaos (23.1%). The control groups were largely Cebuanos (36%) and Maguindanaos (32%).

Data in Appendix 1A reveal that the respondents from both experimental and control groups predominantly used a combination of English, Tagalog and Cebuano dialects at home (20.4% of the experimental and 19.8% of the control groups). This is consistent with their ethnic origin which is largely Cebuano. Their ability to speak English can also be attributed to their educational background which showed that majority of the respondents were in the college level. Chavacano was the second most popular dialect used in combination with Tagalog and English in the experimental group (14.8%) and also Cebuano in the control group (15.1%). This agrees with the finding that Zamboangueno was the second most popular ethnic origin of the respondents.

By area, the dialect spoken at home generally reflected their ethnic origin. Most respondents from Davao (17.5% of experimental and 37% of control) spoke English, Tagalog or Cebuano at home, while respondents from Zamboanga (46.2% of experimental and 64% of control) spoke Chavacano in addition to these 3 dialects. On the other hand, the experimental and control groups of Cotabato were quite different in terms of the dialects spoken at home. While a combination of

English, Tagalog, Cebuano, Ilonggo and Chavacano was most popular among the experimental group, the control group was equally divided (18.5%) between those who spoke purely Maguindanao, and those who combined the same dialect with Tagalog, Cebuano, Ilonggo and English.

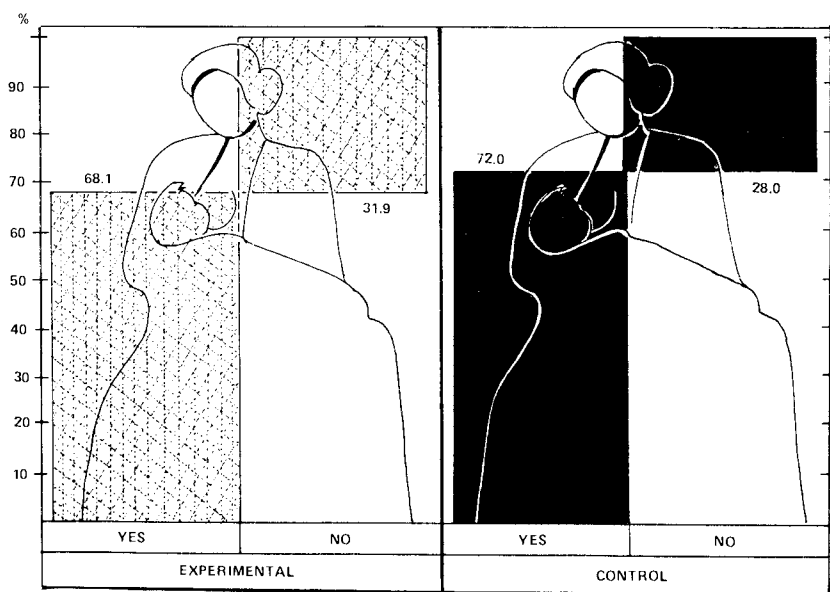
With regards to the dialect spoken in the place of work, Appendix 1A reveals that Cebuano was the predominant dialect spoken (28% of experimental and 16.4% of control). This could be explained by the fact that Cebuano was also their common ethnic origin. The same dialect was most popular among respondents from Davao (55.2% of the experimental and 38.7% of control) with Tagalog – Cebuano as the next (16.1%) among the control group and English – Tagalog – Cebuano (14.3%) among the experimental group. While the experimental group in Zamboanga identified Tagalog – Chavacano – English (19%) and Tagalog – Chavacano – Cebuano (16.1%) as the first 2 popular dialects spoken at work, the control group mentioned pure Chavacano (31.8%) as first and English – Chavacano (22.7%) as second. The Cotabato experimental group commonly used Tagalog – Maguindanaon (30%), while the control group cited Tagalog – Cebuano (30.8%). This agrees with the finding that the control group in Cotabato was largely Cebuano (36%).

A. 2. Breastfeeding Experience and Training

To obtain a better picture of the respondents, they were asked to answer questions which were more closely related to their work in promoting breastfeeding. These included their breastfeeding experiences and formal and informal trainings received. Table 1A presents their responses to these questions.

Data show that majority of the married respondents had breastfed their children with 68.11% in the experimental group and 72.00% in the control group. A little more than one fourth of respondents never breastfed (31.9% in the experimental and 28.0% in the control groups) any of their children.

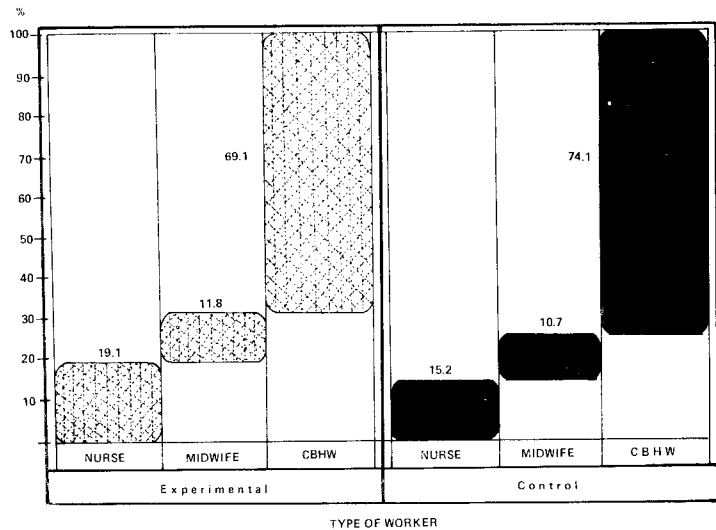
FIGURE 3: PERCENTAGE DISTRIBUTION OF RESPONDENTS BY BREASTFEEDING EXPERIENCE.



Among the areas of study, Davao had the highest percentage of respondents who had breastfeeding experience, with 93.2% in the experimental group and 94.11% in the control group. Zamboanga had the lowest percentage of those who had breastfed their children, with 15.4% in the experimental group and 18.5% in the control group.

Majority of the members of the experimental and control groups were community-based health workers. (Experimental – 69.1%, control – 74.1%). Zamboanga had the biggest percentage of nurses and midwives with 48.4% nurses and 19.4% midwives in the experimental and 40.6% nurses and 34.4% midwives in the control groups.

FIGURE 4: PERCENTAGE DISTRIBUTION OF RESPONDENTS BY TYPE OF WORKER.



Among the health service providers, only the nurses and midwives received formal training. About 1/3 of the experimental group and 1/4 of the control group fell under these categories. These groups received formal training in schools of nursing and midwifery. When asked to indicate the extent of training they had in school, satisfactory responses were given. More than half of both the experimental and control groups signified that they had been given much instruction (51.4% of the experimental and 51.2% of control) on breastfeeding and about one fourth received very extensive instruction (15.7% of experimental and 27.6% of control).

The service providers were also asked if they had received other trainings on breastfeeding. To this, 58.9% of the experimental group and 65.2% of the control group answered in the affirmative.

Among the areas under study, Davao had the highest number of respondents who received additional trainings (14.5% of the experimental and 83.6% of the control).

Appendix 1A shows that the type of training ranged from health servicing to breastfeeding, to primary health care, to nutrition. The most common was Barangay Health Working (48.5%) sponsored by the Department of Health and the Catholic Church agencies. Mentioned trainings were: Growth Monitoring, Oral Rehydration, Breastfeeding, Immunization (GOBBIH/GOBI), sponsored by Notre Dame University Community Extension Service (NDU-CES) and the Catholic Church agencies (27.5%); Mothers' class sponsored by the Department of Health, Catholic Relief Service (CCF/CRS) and the School of Midwifery (21.27%), Breastfeeding Seminar given by San Pedro College, National Integrated Midwives, Red Cross, Nutrition Council, Ateneo de Davao University, City Health Office, Konsumo Dabaw and NDU-CES (27.7%).

A little less than one fourth of the respondents in the control group (23.7%) mentioned the under six training/Primary Health Care sponsored by the Department of Health, NDU-CES and Community Organization (CO). Others commonly mentioned were training on Herbal Medicine (13.2%), Barangay Health Working (10.5%) sponsored by the DOH and the Catholic Church agencies, GOBBI/GOBI (10.5%) given by NDU-CES and the Catholic Church agencies.

B. 1. Evaluation of the Manual

The manual developed by the research team was distributed to the experimental group prior to conducting the training program. A pre-test before the distribution of the manual was administered. Post-tests were conducted immediately after the training and six months later. Focus discussions were also undertaken after 6 months in all the three study sites to further evaluate the usefulness of the manual and the training.

The following attributes of the manual were evaluated:

1. presentation – cover, title, illustrations on the cover and the texts, lay-out, sequence of topics.

2. content – usefulness, relevance and clarity of information.

A twenty (20) item Likert scale consisting of statements related to the criteria mentioned above were used to evaluate the manual. These statements were answered by using the following scale: Strongly Agree (SA) – 1; Agree (a) – 2; Undecided (U) – 3; Disagree (D) – 4; Strongly Disagree (SD) – 5.

Presentation of the Cover

Earlier discussions with the health workers revealed that two languages were commonly preferred for the manual. Two versions were then produced: English, and Cebuano. Due to some printing problems, the manuals were colored differently, the English version in green and the Cebuano version in yellow.

Based on the rating scale, the lower the numerical value of the rating, the more favorable is the response. The low mean rating of the statements reveals high acceptability of the cover of the manual. (Refer to Table 1). Though mentioned in the focus group discussions that the cover needed to be improved, the survey shows that the cover is generally acceptable to the respondents.

The respondents gave the highest rating to the statement “title gives a general idea of what is discussed in the manual”. The over-all mean rating is 1.55. The second highest rating (1.65) was given to the statement “the letters of the manual were readable” and were “in proportion to the size of the cover.” They gave higher rating to the protection provided by the cover (1.69) compared to attractiveness (1.820) and harmony of its colors (1.90).

Though many respondents claimed that the illustration supports the title, the focus group discussion suggested that realistic, rather than abstract illustrations be used in the cover. The Davao group proposed using an actual picture of a breastfeeding mother on the cover.

Table 1. Mean Rating on the Presentation of the Cover

	Cotabato	Davao	Zamboanga	Overall
The cover is attractive	1.79	1.87	1.77	1.82
The cover is a good protection for the inside pages	1.62	1.75	1.63	1.69
The color of the cover is pleasing to the eyes; there is harmony of colors	1.88	1.92	1.87	1.90
The letters of the cover title are readable and in proportion to the size of the cover	1.62	1.70	1.57	1.65
The cover illustration supports the title, does not distract from the title	2.21	1.70	1.83	1.85

Presentation of the Contents

Presentation of the manual was further assessed on the bases of its lay-out, arrangement of topics and coordination of topics and content.

Table 2. Mean Rating on Printing and Illustrations of the Manual

	Cotabato	Davao	Zamboanga	Overall
The prints are readable and easy to read	1.58	1.45	1.43	1.47
The paragraphs are spaced in proper intervals	1.75	1.58	1.43	1.57
The module titles reflect the content of the whole	1.50	1.49	1.47	1.48
The sequence of topics is presented in an orderly manner	2.04	1.50	1.60	1.65
The illustrations are of the proper size	2.08	1.83	1.63	1.83
The illustrations make the discussion clearer	1.87	1.64	1.60	1.68
The persons shown in the illustration represent our regular clients	2.04	2.03	1.70	1.94

The overall scores show that the least acceptable statements are “the persons shown in the illustration represent our regular clients” (1.94) and “illustrations are of the proper size” (1.83). On these statements, the Cotabato respondents gave the highest mean scores with 2.04 and 2.08 correspondingly. Respondents from Davao City seemed not to agree very much that the persons shown in the illustrations represent the regular clients.

The respondents who attended the focus group discussion in Cotabato added that the illustration on the mechanism of milk production should be bigger. Such suggestion is consistent with the recommendations of respondents in the post-test II (0₃) (Refer to Table 5A Appendix).

The focus group discussion in Zamboanga tackled mostly the illustrations presented inside the manual. They wanted changes in the colors of some pictures and preferred flesh color for all illustrations. They suggested that figures 1 to 3 on pages 2 and 3 (Figure 1. Structure of a Human Breast; Figure 2. A Cross section of an alveolus; and Figure 3. Mechanism of Milk Production) be done in colors.

Many respondents from Cotabato did not agree as much as the Davao and Zamboanga respondents that the “sequence of topics is presented in orderly manner.” It is shown in the mean score which is 2.04 in Cotabato, while the mean scores in Davao and Zamboanga are 1.50 and 1.60 respectively. (Refer to Table 2)

Respondents liked the prints used in the manual. They agreed that “prints are readable and easy to read.” The overall mean score of this item which is 1.47 is the lowest rating given among statements related to the presentation of the content. This indicates that it is the most acceptable statement. This is followed by the statement “the module titles reflect the content of the module” (1.48). Many of the respondents also favorably responded to the statement “the paragraphs are spaced in proper intervals” (1.57). On the whole, those who received the manual were pleased with the way the contents are presented and organized, except for some improvements in the illustrations.

Content of the Manual

The content was assessed by respondents in terms of its usefulness, relevance and clarity.

Table 3. Mean Ratings on the Content of the Manual

	Cotabato	Davao	Zamboanga	Overall
The contents are very important	1.54	1.28	1.40	1.37
I learn a lot from each module	1.54	1.49	1.43	1.53
The modules cover almost all the necessary topics	1.71	1.55	1.73	1.63
The contents of the manual can be easily understood	1.54	1.51	1.50	1.50

The overall mean ratings in Table 3 are generally low which indicate that respondents found the contents of the manual very useful, relevant and clear. Usefulness of the manual is exemplified by the low ratings on the statements “contents are very important” (1.37) and “I learned a lot from each module” (1.53). These are reinforced in the focus group discussion when participants mentioned that the manual provides solutions to problems on breastfeeding, especially in the understanding of the anatomy and physiology of the breast. The manual also enabled them to demonstrate milk expression to new mothers. Usefulness of the manual had been repeatedly stated in the post-test (O₃). Table 4A in the appendix shows that in general respondents considered the manual useful, reliable and good. The Davao and Zamboanga respondents also claimed it is simple and easily understood, informative, and attractive.

Table 3 further shows the respondents agreeing that the “modules cover almost all the necessary topics” (1.63). This statement indicates that the manual is relevant to the job of the health workers, because most of the topics they discussed with their clients were covered therein. Table 3A (refer to Appendix) also reveals that the respondents used the manual as personal reference and as resource material for clients. The extensive use of the manual was also manifested in the frequency of use by the recipient health workers.

Ninety-nine percent of the respondents who received the manual used them. More than half of whom used the manual regularly and as needed. Considering the nature of work and contact of respondents with the clients, this means very frequent usage because they meet their clients almost everyday in the market and in the neighborhood where the health workers work and live.

Though generally acceptable, the manual still needs improvement. The respondents or participants of the focus group discussion pointed out some areas to be looked into. The results of the focus group discussion suggest that the manual should be enriched and translated in the dialect and some technical terms must be simplified. The problem on the use of contraceptives while breastfeeding emerged many times in the discussions. Related to this, they recommended that all drugs can be taken while breastfeeding should be included in the manual. Others suggestions were: incorporate nutrition in the discussion of breastfeeding and make a clear presentation of the prolactin cycle.

B. 2 Training—Workshop Evaluation

Questions on the objectives, usefulness, participation in the workshop and general evaluation were asked using the following scale: Very Much – 1; Much – 2; Moderate – 3; Very Little – 4; and Not At All – 5.

A. Objectives of the Workshop

Three items were rated to evaluate the objectives of the workshop. These were:

1. clarity of training objectives;
2. relevance to their jobs, needs and responsibilities as health service providers; and
3. attainment of the workshop objectives

Table 4. Clarity of Training Objectives

Categories of Response	E X P E R I M E N T A L							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Clear	11	45.1	39	73.6	22	73.3	72	67.0
Clear	10	41.7	12	22.6	7	28.3	29	27.0
Moderately Clear	2	8.3	2	3.8	1	3.3	5	5.0
Slightly Clear	0	0.0	0	0.0	0	0.0	0	0.0
Not at all	1	4.2	0	0.0	0	0.0	1	1.0
Total	27		53		30		107	

When asked about the clarity of the training objectives, majority of the respondents from Davao (73.6%) answered that the training objectives were stated very clearly. Although less than 50% of the respondents from Cotabato confirmed the objectives to be very clear, the overall % across the 3 areas was 94.0 percent. There was only one respondent from Cotabato who considered the objectives as not at all clear.

Table 5. Relevance of Objectives to Job, Needs and Responsibilities

Categories of Response	E X P E R I M E N T A L							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	12	50.0	43	81.1	22	73.3	77	72.0
Much	6	25.0	8	15.1	5	16.7	19	18.0
Moderate	6	25.0	2	3.8	1	10.0	11	10.0
Very little	0	0.0	0	0.0	0	0.0	0	0.0
Not at all	0	0.0	0	0.0	0	0.0	0	0.0
Total	24		53		30		107	

A very high percentage of respondents from Davao (81.1%) and Zamboanga (73.3%) regarded the training objectives to be very much relevant to the job, needs and responsibilities of the health service providers. The observation was also concurred in by 50 percent of the Cotabato respondents.

Table 6. Attainment of Training - Workshops Objectives Received by Respondents

Categories of Response	E X P E R I M E N T A L							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Completely attained	8	33.3	22	41.5	23	76.7	53	50.0
Generally attained	7	29.2	27	50.9	5	16.7	39	36.0
Moderately attained	8	33.3	4	7.6	2	6.7	14	13.0
Slightly attained	1	4.1	0	0.0	0	0.0	1	1.0
Not at all	0	0.0	0	0.0	0	0.0	0	0.0
Total	30		53		30		107 100.0	

Regarding the attainment of the workshop objectives, a total of 86 percent of the respondents from the 3 study areas stated that these objectives were completely and generally attained.

The participants were also asked to rate the usefulness of the workshop in imparting breastfeeding concepts and health strategies. It should be noted that the process adopted by the workshop in introducing the health education strategies is unconventional in the sense that the participants were asked to role-play the strategies.

Table 7. Usefulness of Workshop in Understanding Breastfeeding concepts

Categories of Response	E X P E R I M E N T A L							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	14	58.3	41	77.3	20	90.0	82	77.0
Much	4	16.7	9	17.0	2	6.7	15	14.0
Moderate	6	25.0	2	3.8	1	3.3	9	8.0
Very little	0	0.0	1	1.9	0	0.0	1	1.0
Not at all	0	0.0	0	0.0	0	0.0	1	1.0
Total	24		53		30		57 100.0	

The same pattern of response was noted when 91 percent of the total number of respondents declared that the workshop was very much useful in making them understand breastfeeding concepts. Among the three areas, Zamboanga had the highest percentage of respondents (90.0%) who considered the workshop very much useful in the comprehension of breastfeeding concepts. On the other hand, only 8.3% of the respondents from Cotabato agreed that it is very much useful.

The focus group discussion in Cotabato further emphasized the usefulness of the training workshop in clarifying related concepts. They felt that the training workshop reinforced the content by explaining to them the information presented in the manual. On the process, the issues and misconceptions on breastfeeding were clarified and some problems on the use of the manual surfaced.

The respondents from Davao added that they also gained knowledge from the training which can be useful in their motivational and counseling work with clients. They also learned strategies on how to impart knowledge of breastfeeding. It was in the training that some groups expressed great interest in promoting breastfeeding. As a whole, they pointed out that all aspects of the training were useful to them.

Table 8. Usefulness of Workshops in Understanding Health Education Strategies

Categories of Response	EXPERIMENTAL							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	10	41.7	27	50.9	22	73.3	59	55.0
Much	8	33.3	14	26.4	8	26.7	30	28.0
Moderate	6	25.0	11	20.8	0	0.0	17	16.0
Very little	0	0.0	0	0.0	0	0.0	0	0.0
Not at all	0	0.0	1	1.9	0	0.0	1	1.0
Total	30		53		30		107	100.0

Table 8 also shows that majority (*83%) of the participants in the experimental group declared that the workshop proved to be very much useful in making them understand different health education strategies. About 16% rated moderately and only one participant answered not at all because his work in the clinic will not allow him to use the strategies.

Workshop Participation

Tables 9 and 10 show majority of the respondents rating themselves highly in their participation in small group discussion (73%) and open forum (63%). Only a small percentage were not active in the workshop (2%) and in the open forum (2%). It was observed that a few of them were hesitant to join the activities of the workshop although they were slightly active in the small group discussion.

Table 9. Participation in Small Group Discussion

Categories of Response	EXPERIMENTAL							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	7	29.2	23	43.4	15	50.0	45	42.0
Much	8	33.3	18	34.0	7	23.3	33	31.0
Moderate	7	29.2	11	20.8	5	16.7	23	21.0
Very little	1	4.2	1	1.9	2	6.7	4	4.0
Not at all	1	4.2	0	0.0	1	3.3	2	2.0
Total	24		53		30		107	

Table 10. Participation in Open Forum

Categories of Response	EXPERIMENTAL							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	7	29.2	17	23.1	3	10.0	27	25.0
Much	8	33.3	21	59.7	12	40.0	41	38.0
Moderate	5	20.8	8	15.1	12	40.0	25	23.0
Very little	3	12.5	7	13.2	2	6.7	12	11.0
Not at all	1	4.2	0	0.0	1	3.3	2	2.0
Total	24		53		30		107	

General Evaluation

When the respondents were asked to rate the usefulness of the plenary session in understanding the manual, the great majority (83%) replied in the affirmative.

As a whole, the plenary was perceived to be very much useful by the health service providers in the three areas of study. This was also the overall perception (87%) of the respondents when they were made to rate the usefulness of the manual in the promotion of breastfeeding. (Table 12).

Generally, the training-workshop was considered very useful by the participants from the cities of Cotabato, Davao and Zamboanga.

Table 11. Aspects of the Workshop Participants Like Best (Multiple Response)

	Cotabato	Davao	Zamboanga	Total
1. Listing of Common Problem	1	0	1	2
2. Group discussion/sharing of experiences	0	13	4	17
3. Open Forum	1	3	4	8
4. Presentation of report	0	2	1	3
5. Role play	30	6	9	45
6. General approach	3	9	3	15
7. Identification of strategies	1	0	1	2
8. Lecture of breastfeeding specialist	1	2	1	4

Table 12. Usefulness of Manual in Promotion of Breastfeeding

Categories of Response	EXPERIMENTAL							
	Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%
Very Much	14	53.3	40	70.5	22	73.3	76	71
Much	1	4.2	12	22.6	4	13.3	17	16
Moderate	9	37.5	1.	1.9	3	10.0	13	12
Very little	0	0.0	0	0.0	0	0.0	0	0.0
Not at all	0	0.0	0	0.0	1	3.3	1	1.0
Total	24		53		30		107	

Table 11 reveals that when respondents were asked what they liked best in the training-workshop, many of them cited role play (45). This is followed by group discussion (17) and the general approach of the workshop (15). It was noted that of the three areas, Cotabato and Zamboanga preferred role play and Davao liked group discussion best.

The respondents were also asked in the post-test (O_3) what they did not like in the workshop. Only respondents from Davao answered the question. Six out of fifty-three (53) said that it was short and limited in terms of time for the lecture and role play. Two mentioned that there were no visual aids and the same number pointed to lack of participation in the workshop. Recommendations were given in the post-test (O_3) as reflected in Table 13.

Table 13. Recommendation for Improving Training-Workshop

	Cotabato	Davao	Zamboanga	Total
1. Provision of better training facilities (venue, social system, etc.)			2	2
2. Longer time for conduct of training (3 days)	9	12	2	23
3. More experts/lecturers and time for lecturer		3	2	5
4. Give more incentives to participants	2		1	3
5. Modules be discussed in detail	3	4	1	8
6. More demonstration/other strategies (e. g. expression of milk)	2	1	1	4
7. Give out more visual aid for use in actual promotion	2	2	1	5
8. Conduct training in the dialect or in Tagalog	4			4
9. More explanations to follow role play	1	1		2
10. Synthesis of all activities	1			1

On the whole, the training was considered short, but many respondents – twenty-three out of one hundred seven participants – wanted to extend the training to three days. Other recommendations came out of the focus group discussion in the 3 different study sites. In Davao, respondents agreed to lengthen the training and were interested in expanding its content to include aspects on feeding and programs on income-generating activities as entry point to the topic of breastfeeding. They also suggested that the idea of having a milk bank should be realized.

To continue the efforts done by the research team, they proposed that those who were trained should undergo continuing education by having regular meetings and updates on their experiences and problems in the promotion of breastfeeding.

In Cotabato, respondents agreed that more health workers should be trained and supplied with the manual. Actual demonstration on breastfeeding should also be part of the training. They also added that the lectures on the prolactin cycle and drugs that are contraindicated in breastfeeding be dealt more exhaustively.

Zamboanga respondents reiterated the need for doctors to be provided the same training because they are more influential in the promotion of breastfeeding. They also felt that extensive explanations on the use of pills while breastfeeding should be given in the training. They recommended that barangay officials be informed to have their support for the project. It would be helpful if the mass media, particularly the Philippine Information Agency, be asked to help popularize the project.

C. Knowledge, Attitude and Practice on the Promotion of Breastfeeding

C. 1. Knowledge on Breastfeeding

The knowledge test composed of 20 multiple choice items was used to determine the effectiveness of the manual and the training.

A separate control group design was used in the study, so the following analyses had to be made to determine the effectiveness of the manual and training.

Initial comparability was established by comparing the pre-test results of both the experimental and control groups. This yielded a t-ratio of 0.45, which is not significant. This implies that both groups have the same level of knowledge at the start of the program.

Table 14. Comparison of Pre-test results of experimental and control

	PRE - TEST			
	Experimental		Control	
	N	%	%	
0 -	0	0.0	0	0.0
1 - 4	4	3.6	3	5.4
5 - 8	41	36.6	18	32.1
9 - 12	57	50.9	30	53.6
13 - 16	8	7.1	5	8.9
17 - 20	2	1.8	0	0.0
N	112		56	
Mean	9.11		9.30	
S. D.	2.77		2.50	
t - ratio	0.45		n.s.	

Immediately after the training, the same knowledge test was administered to the experimental and separate control groups.

The pre-test and post-test scores of the experimental groups were compared. The mean difference of the two tests was 2.82 yielding a t-ratio of 10.93 which is significant at the .001 level. This implies that the manual and the training significantly improved the knowledge on breast-feeding of the experimental group. (Table 14).

Table 15. Comparative Distribution of Scores of the Experimental Group

Scores	EXPERIMENTAL			
	Pre - test		Post - test	
	N	%	N	%
0	0	0.0	0	0.0
1 - 4	4	3.6	1	0.94
5 - 8	41	36.6	18	17.0
9 - 12	57	50.9	51	48.1
13 - 16	8	7.1	27	25.5
17 - 20	2	1.8	9	8.5
N	107			
Mean difference	2.82			
S. D.	2.67			
t - ratio	10.93		P < .001	

Per item analysis revealed further that marked increases (more than 10 points) in the pre-test and post-test scores were seen in 10 items. Only 3 items did not show any increase in scores. (Table 16)

Table 16. Differences in Percent per Item of Knowledge Test (Experimental Group)

Item No.	Pre-test	Post-test	Difference
1	58.9	67.0	8.1
2	45.9	57.5	11.6
3	83.1	83.0	0.9
4	13.4	34.9	21.5
5	94.6	93.4	- 1.2
6	54.5	52.8	- 1.8
7	22.3	26.4	4.1
8	67.9	71.7	3.8
9	30.4	63.2	32.8
10	19.6	47.2	27.6
11	73.2	79.2	6.0
12	67.9	86.8	18.9
13	12.5	38.7	26.2
14	44.6	61.3	16.7
15	7.1	23.6	16.5
16	36.6	43.4	6.8
17	41.1	38.7	- 2.4
18	24.6	38.7	14.1
19	32.4	67.0	26.4
20	84.8	85.8	1.0

Since the experimental and control groups were initially comparable, the post-tests were also compared. The obtained *t*-ratio of 3.89 was significant at the .01 level (Table 17). This confirmed the finding of the preceding analysis that the manual and training were effective tools in enhancing knowledge on breastfeeding. The groups exposed to the treatment scored significantly higher in the post-test than the other group.

This is also revealed in the comparison of the percent correct per item analysis of the pre-test experimental group and post-test control group. Very slight increases were seen in 12 items and marked decreases in 7 items were observed. (Table 18)

Table 17. Comparison of Post-test Results of Experimental and Control Groups

	P O S T - T E S T I			
	Experimental		Control	
	N	%	N	%
0	0	0.0	0	0.0
1 - 4	1	0.94	2	3.5
5 - 8	18	17.0	16	20.1
9 - 12	51	48.1	33	57.9
13 - 16	27	25.5	6	10.5
17 - 20	9	8.5	0	0.0
N	106		57	
Mean	11.47		9.52	
S. D.	3.26		2.59	
t - ratio	3.89		P < .001	

Table 18. Differences in Percent per Item of the Knowledge Test (Pre-test
Experimental Group – Post-test Control Group)

Item No.	Pre-test	Post-test	Difference
1	52.6	52.3	- 0.3
2	45.9	43.9	- 2.0
3	82.1	80.7	- 1.4
4	13.4	22.2	8.8
5	94.6	89.5	- 5.1
6	54.5	33.9	- 20.6
7	22.3	28.1	5.8
8	67.9	91.4	3.5
9	30.4	40.4	10.0
10	19.6	19.6	0.0
11	73.2	82.5	9.5
12	67.9	82.5	14.6
13	12.5	28.1	15.6
14	44.6	52.6	8.0
15	7.1	12.5	5.4
16	36.6	38.6	2.0
17	41.1	50.0	8.9
18	24.6	28.1	3.5
19	32.4	31.6	- 0.8
20	84.8	81.8	- 3.0

Six months after the training, post-test II was administered. The same knowledge test was administered to the experimental and separate control groups (those who were given post-test I), but the test was first revised based on the result of an item analysis of post-test I scores. Those questions which were either too easy or too difficult to answer were improved upon (facility index too high; discrimination index too low).

The result of the knowledge test for post-test II showed that in comparing the experiment group ($\bar{x} = 10.43$) and the control group ($\bar{x} = 9.10$), the experimental group still scored higher and the t-ratio is significant ($t = 2.05$) at the .05 level between the scores of the two groups.

The mean score of the experimental group even decreased from $\bar{x} = 11.47$ to $\bar{x} = 10.43$. This could be explained by the memory factor (six months had elapsed since the training); there were no sanctions for the participants/trainees to retain whatever knowledge was gained from the training; and the novelty of the experiment had probably worn off. The testing effect could be another factor as evidenced by some respondents who declined to be tested or who just played with the testing instrument.

Table 19. Comparison of Post-test II Results of Experimental and Control Groups

Knowledge Test Scores	Experimental		Control	
	N	%	N	%
0	0	0.0	0	0.0
1 – 4	2	2.0	4	7.8
5 – 8	29	29.6	18	35.3
9 – 12	41	91.8	20	39.2
13 – 16	16	16.3	9	17.6
17 – 20	10	10.2	0	0.0
X		10.43		9.10
S. D.		4.0		3.3
N		98		51
t – ratio		2.05	P	.05

It could also be noted that the number of respondents in the experimental group decreased from 106 in February to 98 in August (six months after). The control group also had a drop-out of 5 members. Many of these drop-outs from the program were nurses and midwives who left the country for job opportunities abroad.

In brief, a comparison of the knowledge test scores of both experimental and control groups based on the results of the three tests given definitely shows these to be learnings from both the manual and the training. However, extraneous variables such as the brain-drain of health personnel, the memory effect, and the testing effect were not foreseen by the research team, which could explain the slight decrease in the knowledge scores from post-test I to post-test II.

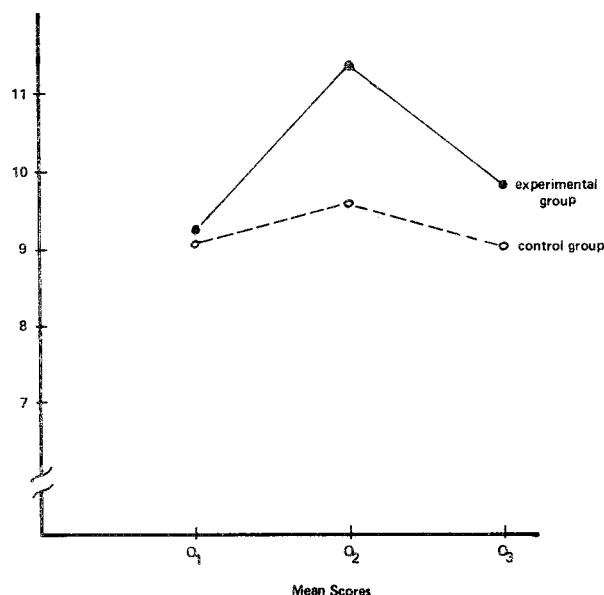


FIGURE 5: KNOWLEDGE TEST RESULTS – EXPERIMENTAL AND CONTROL GROUPS PRE-TEST, POST TEST I, POST TEST II.

C. 2. Attitude Toward Breastfeeding Promotion

Promotion of breastfeeding requires a favorable attitude towards it. Hence, both the training and the manual aimed for the development of favorable attitude towards breastfeeding and its promotion among the health service providers.

To determine, therefore, the effectiveness of the manual and the training, a 20-item Likert scale instrument was constructed to measure the changes in attitudes of the health service pro-

viders. The test contained items on the health workers' attitude towards the promotion of breast-feeding and some misconceptions and problems.

This portion presents the results of the attitude tests administered to both the experimental and control groups before and after the distribution of the manual and conduct of the training and 6 months after the training. Comparisons of test results were then made.

The experimental group test results as shown in Table 20 reveal that the differences in attitude between the pre-test and the post-test is significant at the .001 level.

Table 20. Comparison of the Pre-test and Post-test I Results of the Experimental Groups

	Pre-test	Post-test I
X	73.54	80.40
SD	5.30	8.02
N	106	106
mean difference	6.94	
S. D. difference	10.97	
t - ratio	6.69	P←.001

This indicates a marked increase in the level of attitude of the members of the experimental group. It may be concluded that the manual and the training are effective instruments in bringing about changes in attitude towards breastfeeding.

Comparisons were also made between the test results of the experimental and control groups. Since pre-test separate control group design was used in this study, several comparisons had to be made in order to come up with significant conclusions. First, initial comparability was established between the pre-tests of the experimental and control groups. The results present an almost equal level of attitude. (see Table 21)

Table 21. Pre-test Results of the Experimental and Control Groups

	Experimental	Control
X scores	73.54	73.66
S. D.	5.30	7.51
N =	106	56
\bar{X} difference	0.12	
S. D. difference	1.02	
t - ratio	0.12	n. s.

Second comparison was made between the pre-test and post-test results of the control groups.

Table 22. Pre-test and Post-test I results of the Control Group

	Pre-test	Post-test I
X	73.66	79.37
S. D.	7.51	6.96
N	56	54
t - ratio of difference	4.09	P←.001

The t-ratio of 4.09 is significant at the .001, thus indicating a significant rise in the level of attitude of the control group (Table 22).

Third, a comparison of the post-test I results of the experimental and control groups was also made. The results show that no marked difference is seen between the two groups, despite the training and the manual afforded the members of the experimental group. (See Table 23)

Table 23. Post-test I Results of the Experimental and Control Groups

	Experimental	Control
\bar{X}	80.40	79.37
S. D.	8.02	6.96
t - ratio	106	54
\bar{X} difference	1.11	
S. D. difference	1.28	
t - ratio	0.86	n. s.

These comparisons show significant gains in the level of attitude of the control group. Just like the experimental group, there has been a marked increase in the attitudinal level indicating no significant difference between those given the manual and training and those who were not exposed to the latter.

Several factors may account for this phenomenon, namely: the program on the promotion of breastfeeding by the Department of Health and other public and private agencies through media (e. G., radio spots, posters, etc.), the active implementation of the milk code, and the contamination factor arising from the random assignment of the experimental and control groups. It has been observed and randomization process resulted in the assignment of health workers from the same health center to both the experimental and control groups. This provided an opportunity for formal and informal discussions and meetings, sharing of the manual among the health workers in the same center. Thus, the possibility of contamination cannot be avoided.

Six months after the training, the attitude level of the respondents (both experimental and control) were again measured, employing the same attitudinal scale as instrument. This time, there is a significant difference in the attitude level of the experimental and the control group.

Table 24. Comparative Post-test II Results on the Attitude of Experimental and Control Groups

Scores	Experimental		Control	
	N	%	N	%
96 - 100	6	6.1	0	0
86 - 95	17	17.4	5	9.8
76 - 85	41	41.8	17	33.3
66 - 75	27	27.5	21	41.2
65 or less	7	7.1	8	15.7
N =	98		51	
\bar{X}	79.13		74.21	
S. D.	9.8		8.3	
T - ratio		3.05		P < .001

The table above shows a significant t-ratio of 3.05 in testing the difference between the mean attitude score of the experimental group (79.13) compared to the control group's 74.21. Since the introduction of the manual and the training did not produce the desire immediate difference in the attitude level of the experimental group, post-test II showed that in the long run, the experimental group was able to sustain the level of attitude produced by the training and the manual. There

Table 25. Summary of Mean Attitude Scores of both Experimental and Control Groups

	Experimental	Control	Difference	t-value
pre-test	73.54	73.66	0.12	n. s.
post-test I	80.40	79.37	0.86	n. s.
post-test II	79.13	74.21	3.05	P < .001

was a very slight decrease in attitude scores of the experimental group (1.27) compared to a decrease of 5.16 in the control group.

This sustenance of the attitude level in the experimental group could also be due to the project monitoring which boosted their interest in breastfeeding. The focus group discussion held before the administration of post-test II showed the concern of the experimental group to introduce improvements in the manual to make it a more effective tool in the promotion of breastfeeding.

C. 3. Competence to Promote Breastfeeding

To determine the competence of the health service providers in promoting breastfeeding, they were asked to rate themselves in 9 items classified as follows:

a) ability to use specified strategies – 4 items

b) ability to deal with breastfeeding related issues such as. mothers' refusal to breastfeed, conflicting messages, misconceptions and folk beliefs, etc. – 5 items

They were asked to evaluate their abilities before and after the training using the following scale: poor (1), fair (2), good (3), very good (4) excellent (5).

1) Ability to Use Specified Strategies to Promote Breastfeeding

On their ability to use specified strategies to promote breastfeeding, a large number of both the experimental group and the control group rated themselves good. A significant change is seen among the experimental group where only 57.1% rated themselves from good to very good in the pre-test, while 77.6% gave the same rating in the posttest. Mean ratings show the big leap from 2.91 in the pretest to 3.60 in the post-test.

On specific strategies enumerated, a similar trend is observed. For instance, on the item "the ability to conduct one-on-one session", only 50.9% of the experimental group rated themselves from good to very good in the pre-test, but 66.9% gave themselves these ratings in the post-test.

On the ability to conduct group sessions, a slight increase in rating is observed. Sixty-eight percent (67.9%) of the experimental group rated themselves from good, very good, to excellent in the pre-test and 88.6% had these ratings in the post-test.

The third specific task mentioned in the questionnaire is the ability to conduct follow-ups. A similar pattern is seen with mean ratings increasing from 3.20 to 3.66.

Table 26. Mean Ratings for Pre-test and Post-test of the Experimental and Control Groups on the Abilities to Use Strategies to Promote Breastfeeding

	Experimental		Control	
	Pre – test	Post – test	Pre – test	Post – test
1. ability to use specified strategies to promote breastfeeding	2.91	3.60	3.08	3.05
2. ability to conduct one-on-one sessions	2.73	3.07	2.92	2.68
3. ability to conduct group sessions	3.10	3.61	2.83	3.07
4. ability to conduct follow-up	3.20	3.66	3.06	3.31

2) Ability to Deal With Breastfeeding Promotion Related Sessions

The issue on mothers' refusal to breastfeed was asked. Relatively high self-ratings were given by the health service providers of the experimental group in both the pre-test and the post-test in the ability to identify causes for mothers' refusal to breastfeed.

In contrast, low self-ratings are seen in the items on the abilities to deal with conflicting messages and folk beliefs, although an increase in the mean rating of the latter is observed.

They rated themselves better in their ability to clarify misconceptions with 66% rating themselves the same rating in the posttest. The mean ratings among the experimental group changed from 2.99 in the pre-test to 3.58 in the post-test.

Table 27. Mean Ratings for Pre-test and Post-test of the Experimental and Control Groups in Issues Related to the Promotion of Breastfeeding

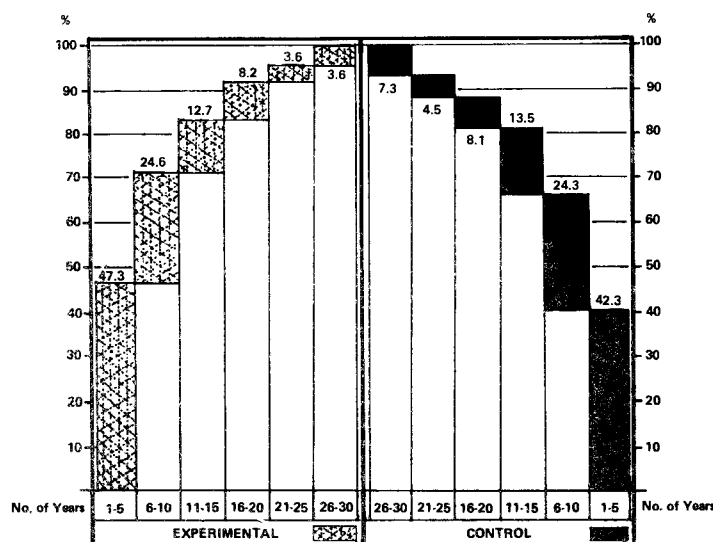
	Experimental		Control	
	Pre — test	Post — test	Pre — test	Post — test
1. ability to identify causes of mothers refusal to breastfeeding	3.35	3.47	3.32	2.96
2. ability to deal with conflicting messages	2.62	3.53	2.60	3.01
3. ability to deal with folk beliefs	2.62	3.53	2.60	3.01
4. ability to clarify misconceptions	2.99	3.58	2.91	3.12

C. 4. Practice in the Promotion of Breastfeeding

Before the training was held and the manual distributed among the health service providers, a survey on their practice in the promotion of breastfeeding was conducted. This set of questions was administered to both the experimental and control groups.

All the respondents of the experimental and control groups had motivated mothers to breastfeed. Moreover, the length of their experience in promoting breastfeeding varied from 1 year to 30 years, but the majority had only 1-5 years experience. They made use of several venues of motivating mothers such as clinic visits (during the pre-natal consultations), home visits, mothers' classes, at the delivery room, etc. Clinic visits, home visits and mothers' classes form parts of the functions of most government health workers particularly the midwives and community-based workers.

FIGURE 6: LENGTH OF PROMOTION OF BREASTFEEDING.



Pre-natal consultations are conducted in the clinics when husband and wife visit for routine check-up. The health service providers discusses with the couple pregnancy and breastfeeding. In most cases, the mother is asked to attend a mothers' class which discusses with health workers

Table 28. Length of Promotion of Breastfeeding

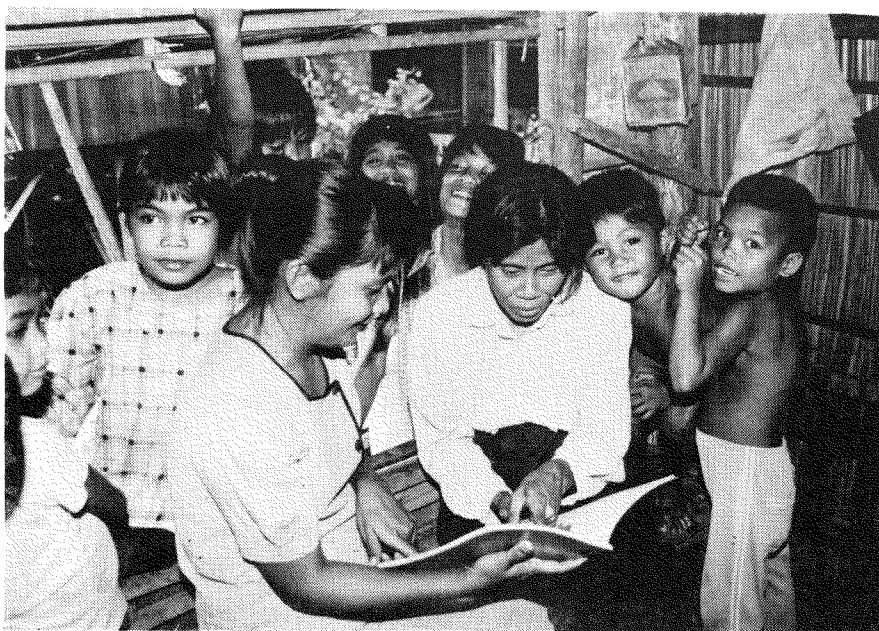
No. of years	Experimental		Control	
	N	%	N	%
1 – 5	52	47.3	47	42.3
6 – 8	27	24.6	27	24.3
11 – 15	14	12.7	15	13.5
16 – 20	9	8.2	9	8.1
21 – 25	4	3.6	5	4.5
26 – 30	4	3.6	8	7.3

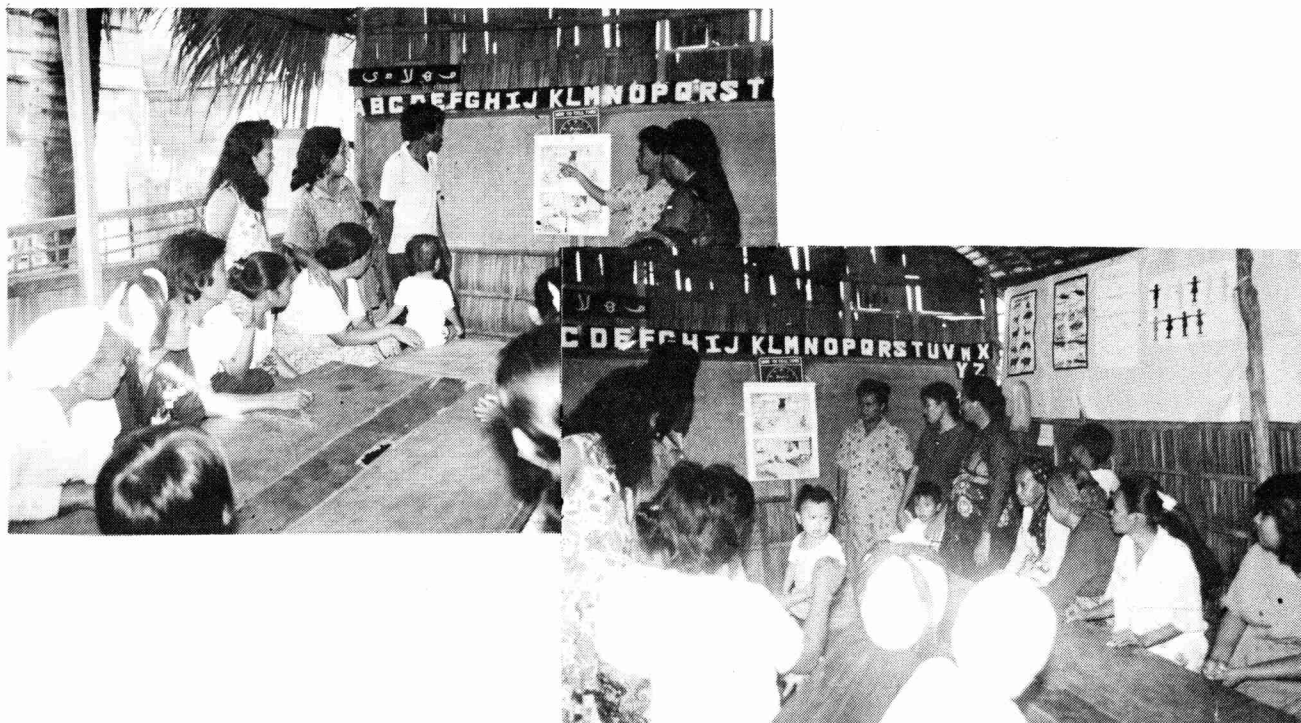
Table 29. Venues for Promoting Breastfeeding (Pre-test)

Venues	Experimental		Control	
	N	%	N	%
1. Mothers class	29	25.91	11	9.9
2. Clinic visits	20	17.80	19	17.1
3. Home visits	21	18.80	47	42.3
4. Mothers class and clinic visits	3	2.7	2	1.8
5. Clinic visits and home visits	2	1.9	3	2.7
6. Mothers class and home visits	4	3.6	3	2.7
7. all of the above	24	21.4	17	15.3
8. others	9	8.0	8	7.2

practices related to mother and child such as breastfeeding, meaning, immunization, etc.

Other health service providers, particularly community-based health workers, had conducted home visits to hold a one-on-one communication with mothers. Topics such as breastfeeding, growth monitoring, immunization and other health practices were taken up.





The results of the study show that majority of the Davao workers in the experimental group (60%) employed clinic visits, while those in Cotabato availed of home visits and mothers' classes. The Zamboanga workers made use of all three venues. The concentration of many Davao workers in the use of clinic visits was due to the fact that they had to attend to many clients. Thus they had very little time for other activities. Davao City has the largest population among the three areas.

It is interesting to note that other non-traditional venues were also used by health service providers to promote breastfeeding in Cotabato and Davao. The most common of these was the community group discussion. Also worth noting is the concern of the health service providers to promote breastfeeding whenever opportunities are present. Hence, informal venues such as casual contacts in nursing or midwifery schools, hospitals, clinics and in the neighborhood were also used.

Aside from trainings received, it is usually important to provide health workers with instructional materials. The data show that there is a large number of health workers who had not been furnished any instructional materials on breastfeeding. (32% for experimental and 42% for control).

The materials come from several government and private agencies. The Department of Health was mentioned by about 40% of the workers as the source of their breastfeeding materials. This shows that despite the Department of Health being the government's arm for health service, it does not provide the necessary services needed by the health workers. This is especially true in Mindanao.

It may be noted also that even with the implementation of the milk code, sales representatives of milk formula company still distribute materials on breastfeeding with underlying messages.

Worth noting also is the active participation of many private groups such as Konsumo Davao, schools of nursing, research offices, etc.

When asked if the health service providers involve the husbands when promoting breastfeeding, an overwhelming majority in the experimental and control (75.9%) groups answered in the positive. This reveals that a lot of health workers see the importance of motivating the husbands to help resolve one of the most common problems presented during the training-workshop.

The health service providers were also asked about their intentions to continue promoting breastfeeding. Except for two respondents from Davao, one from the experimental and the other from the control group, all other respondents responded yes. One of the respondents who answered in the negative said she is too old to promote breastfeeding except when needed to do so.

Another aspect worth studying is the involvement of health service providers in the promotion

of milk formula. Two years ago, the milk code was passed in the Philippines. Among others, the milk code prescribes restrictions on the use of milk formula for infants. This probably accounts for the very low number of health workers advising mothers to use milk formula. In fact, one respondent said that the advice was given prior to the adoption of the milk code.

The reasons given for advising mothers to use infant formula pointed to mothers' conditions like cancer or tuberculosis (44.4% experimental, control 25%), inadequate milk (experimental 16.7%, control 45.4%), without milk after delivery (experimental 27.8%) and attitude towards breastfeeding such as their insistence not to breastfeed (experimental 11.1%, control 8.3%).

The reasons cited show that there are instances when the health service providers have to advise mothers to use milk formula, if they are suffering from cancer or tuberculosis. But, in most instances, when the health service providers have sufficient training and proper interest, they can overcome reasons like inadequate milk, working mother, inverted nipple, etc.

The instructions provided to mothers on milk formula focused on its proper preparation (experimental 68.0%, control 66.7%).

Data on the practice of the health workers in promoting breastfeeding were taken six months after the training was held and the manual issued. Except for a total of 8 dropouts from the experimental group and 5 from the control group, the same respondents were interviewed for post-test II. Unlike the pre-test when only two were not actively promoting breastfeeding, the post-test showed that 16 percent of the control group were no longer involved compared to only 2 percent in the experimental group.

Table 30. Involvement in the Promotion of Breastfeeding

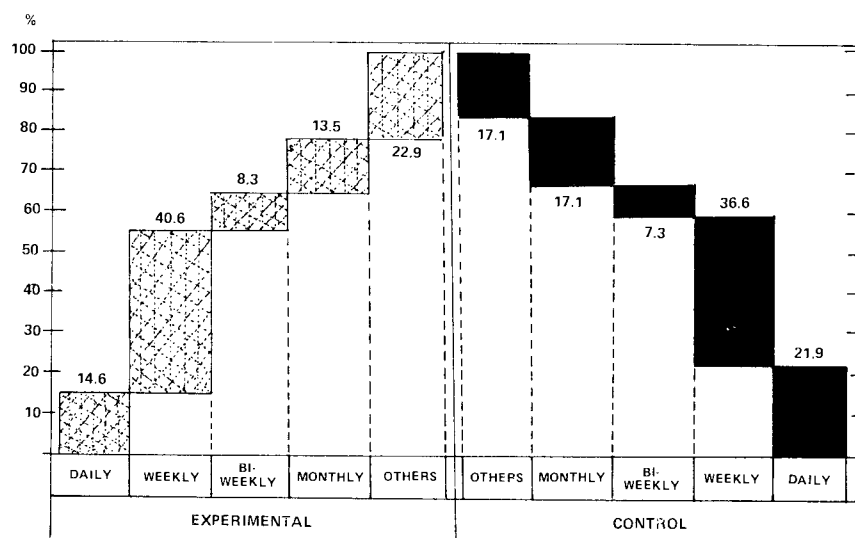
	Experimental		Control	
	N	%	N	%
Yes	96	97.9	43	84.3
No	2	2.1	8	15.7
N	98	100	51	100

This involvement in the promotion of breastfeeding usually took place weekly for the community-based health workers most of whom were volunteers. The nurses and midwives who were regular employees were more frequently involved since they reported to the clinics of health centers daily. A number of respondents from both control and experimental groups mentioned that they took every opportunity to promote breastfeeding. This means that the motivation to promote is really strong.

Table 31. Frequency of Involvement in the Promotion of Breastfeeding

	Experimental		Control	
	N	%	N	%
Daily	14	14.6	9	21.9
Weekly	39	40.6	15	36.6
Bi-weekly	8	8.3	3	7.3
Monthly	13	13.5	7	17.1
Others	22	22.9	7	17.1
	Experimental		Control	
twice a week	6			
thrice a week	2			
4x a week	2			
whenever there is opportunity	7		3	
during deliveries	5		4	

FIGURE 7: FREQUENCY OF INVOLVEMENT IN THE PROMOTION OF BREASTFEEDING.

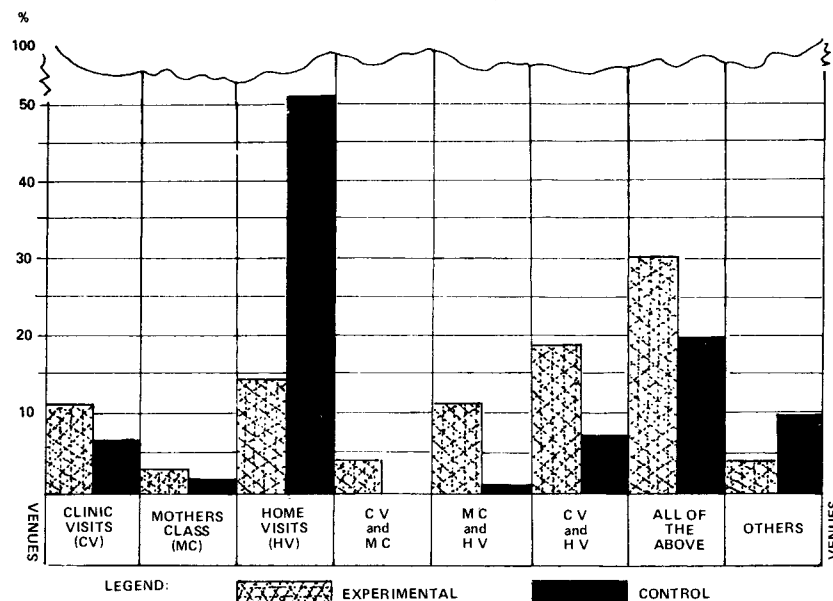


There seemed to be no apparent change in the venues employed by the respondents in the promotion of breastfeeding. The control group does it mostly during home visits. However, there seemed to be an attempt by the experimental group to try varied venues, especially among the Zamboanga and Davao groups. Instead of concentrating on home visits, the highest frequency now falls on the use of all three venues – clinical visits, home visits, and mothers' class.

Table 32. Venues for Promoting Breastfeeding (Post-test)

	Experimental		Control	
	F = 94	%	F = 41	%
Clinic Visits (prenatal)	11	11.7	3	7.3
Mothers' Class/bench class	3	3.2	1	2.4
Home Visits	14	14.9	21	51.2
Clinic Visits and Mothers' Class	4	4.2	0	0.0
Mothers' Class and Home Visits	12	12.8	1	2.4
Clinic Visits and Home Visits	17	18.1	3	7.3
All of the above	29	30.9	8	19.5
Others	4	4.2	4	9.7

**FIGURE 8: VENUES FOR PROMOTING BREASTFEEDING.
(POST TEST)**



Among the topics discussed in the promotion of breastfeeding: the five most frequently mentioned by the experimental group are the following:

1. Benefits of breastfeeding and the importance of breastmilk 26%
2. Proper technique of breastfeeding. 17%
3. Proper nutrition and diet. 8%
4. Breastfeeding concepts 7%
5. Common problems associated with breastfeeding 7%

These topics were also mentioned by the respondents in the control group. However, it is noted that among the topics taken up by the experimental group but which were not touched upon by any in the control group were:

1. Anatomy and physiology of breastfeeding.
2. Importance of the colostrum
3. Nipple exercise
4. Misconceptions on breastfeeding

These topics are found in the manual and had been subjects of lengthy discussions during the training program.

The experimental group also used more strategies in the promotion of breastfeeding. Although both groups availed of individual instruction or the person-to-person dialogue most extensively, the experimental group was able to employ additional strategies such as role play and lecture-discussion. These were not cited in the control group.

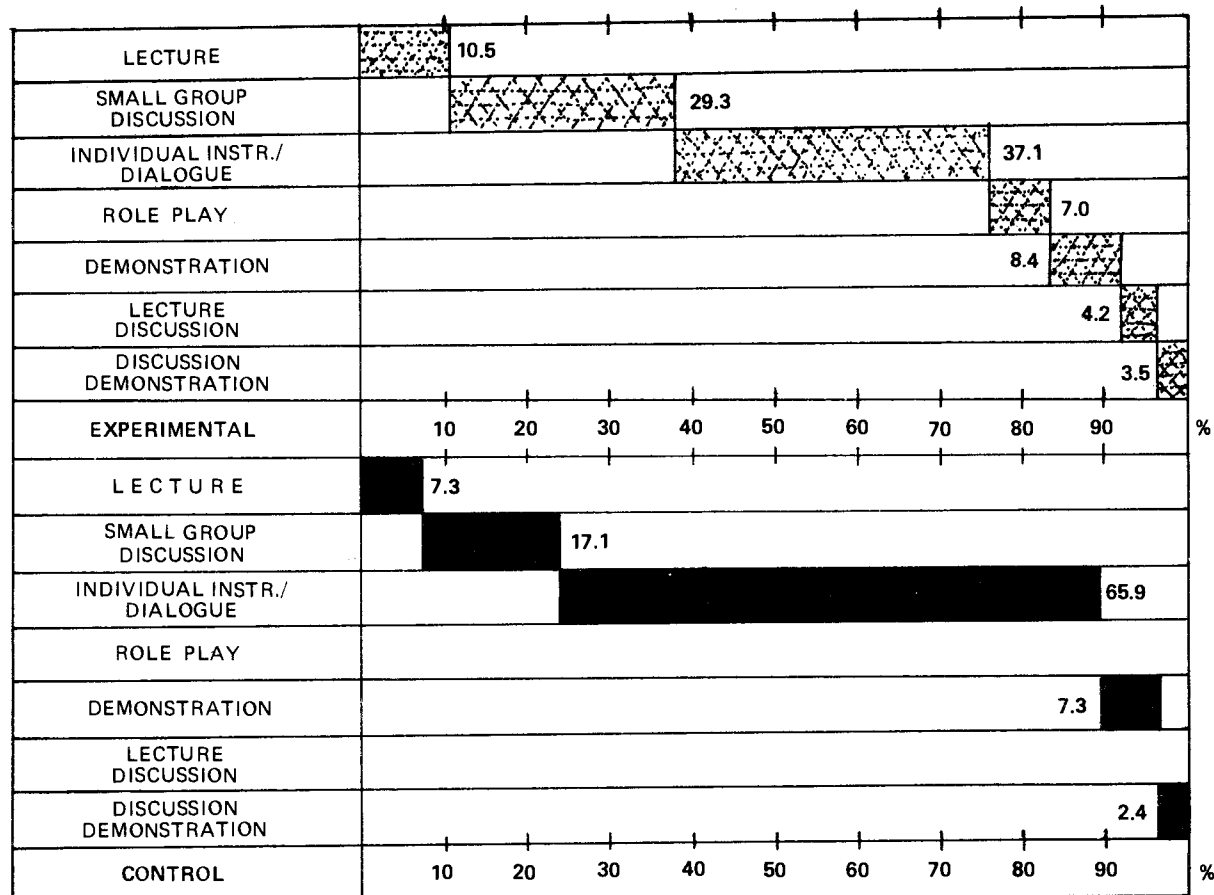


FIGURE 9: STRATEGIES USED IN THE PROMOTION OF BREEASTFEEDING.

Six months after exposure to the training and the manual, the respondents were asked for problems encountered in the promotion of breastfeeding and the corresponding solutions they gave.

The survey results showed that the experimental group met almost the same problems as the control group, but the solutions they recommended were more varied. They probed deeper into problems and were more innovative in recommending solutions to problems of lack of materials or strategies in overcoming misconceptions. The experimental group also realized that implementors themselves can be a source of problems and proceeded to provide solutions such as improving linkages and incentives. This latter problem was not perceived by the control group.

This has reinforced the assumption that the training and manual were able to raise the competence of the experimental group in the promotion of breastfeeding.

C. 5. Relationship of Knowledge and Attitude and Frequency in Promoting breastfeeding

The study was primarily undertaken to determine the effectiveness of the prepared manual and the training in providing knowledge and creating favorable attitude towards breastfeeding and its promotion among health service providers.

It has been shown that improvements in knowledge and attitude have been attained after the training. It has also been shown that about 99% of the experimental group continued to promote breastfeeding during the 6 months period of monitoring. But the frequency of promotion varied from daily to monthly. Although factors such as promotional opportunities, office practices, etc. may account for these variations, breastfeeding knowledge and attitude however, have affected the frequency of promotion.

The results of post-test II administered six months after the training show significant relations between knowledge and frequency of promotion.

Table 33. Correlation and Regression of Knowledge and Attitude Scores on Frequency of Promoting Breastfeeding

	r	R	R^2	Change in R^2	SEE	F – ratio
knowledge scores (x_1)	0.266	0.266	0.071	0.071	3.81	7.38*
attitude scores (x_2)	0.250	0.315	0.099	0.028	9.26	1.47
$Y = -12.8397$		$0.2037 x_1 +$		$0.1791 x_2$		

* significant at the .01 level.

The table also shows that 10% of the variation in the frequency of promotion may be accounted by the degree of knowledge and attitude of the health service providers toward breastfeeding. This implies that to some extent the higher the scores in knowledge and attitude, the greater the frequency of promotion.

Chapter IV

Summary, Conclusion and Recommendations

The overall objective of the study is to determine the effect of a training program using a prepared self-instructional manual on knowledge, attitude, and practice in promoting breastfeeding among service providers.

It attempted to accomplish the following:

1. develop and evaluate a manual on breastfeeding for the use of health service providers;
2. conduct a training program for health service providers; and
3. evaluate the effects of the manual and the training programs on the knowledge, attitude, and practice in the promotion of breastfeeding among health service providers.

The experimental research was used involving 222 service providers as respondents. This sample size was randomly divided into experimental and control groups.

A separate pre-test – post-test control group design was used where the 222 health service providers to the experimental and control groups resulting were randomly assigned – 110 for the experimental group and 112 for the control group.

The entire research project consisted of two major assignments, namely the development of a breastfeeding manual and the conduct of a training workshop.

Summary of Findings

1. Respondents in the control group were slightly older than those in the experimental group. The oldest were from Davao and youngest from Cotabato. Majority in both groups were married. Catholicism was the predominant religion. Davao had the biggest percentage of Catholics, while Cotabato had the least.
2. The experimental group had slightly more educated respondents than the control group. Zamboanga had the biggest proportion of college-level respondents and Davao had the least.
3. On the average, the members of the experimental group had 3 children, while that of the control group had 4 children. Zamboanga had more small families than either Davao or Cotabato in both experimental and control groups.
4. Cebuano was the most popular ethnic origin followed by Zamboangueno. Davao respondents were the most homogeneous, while Cotabato was the most heterogeneous in ethnic origin. Both experimental and control groups were predominantly using a combination of English, Tagalog and Cebuano at home. The dialect spoken at home generally reflected their ethnic origin. In their place of work, Cebuano was the most popular dialect used by the experimental and control groups. By area, Cebuano was the predominant dialect in Davao. Tagalog–Chavacano–English and pure Chavacano were the most common dialects in the experimental and control groups of Zamboanga respectively, while the experimental group in Cotabato used Tagalog–Maguindanaon and the control group Tagalog–Cebuano in their place of origin.
5. Majority of the health service providers had breastfed their children. Davao had the highest percentage, Zamboanga the least.
6. The respondents were largely community-based health workers, except Zamboanga which had more nurses than CBHWs. Nurses and midwives were recipients of instruction on breastfeeding while on formal training.
7. The percentage of health service providers who underwent other trainings on breastfeeding was slightly higher in the control group than in the experimental group. As a whole, majority of the respondents in both groups had undergone other trainings on breastfeeding. Barangay Health Working sponsored by the Department of Health and the Catholic Church agencies was the most frequently mentioned training by both groups.
8. The manual was found to be generally acceptable. But certain needs were pointed out, like:
 - a. more and bigger realistic illustrations
 - b. improvement of colors in the illustrations
 - c. a more detailed discussion of the prolactin cycle

- d. translation into the dialect
- e. simplification of technical terms

9. The training workshop was rated favorably. The training objectives were clear and relevant. The training was found to be useful in understanding breastfeeding concepts and health education strategies. However, the respondents felt that the workshop time was too short.
10. The mean difference of the pre-test and post-test knowledge test scores of the experimental group is significant at the 0.001 level. There is also a significant difference in the post-test knowledge test scores of the experimental and control groups.
11. The differences in percent correct per item of the knowledge test of the pre-test experimental group show marked increases in more than 10 items, while only slight increases were observed in the post-test control group.
12. There are slight decreases in the mean scores of the post-test II knowledge test of both the experimental and control groups.
13. A comparison of the mean scores of the attitude test of the experimental group shows a significant difference between the pre-test and post-test I.
14. The mean differences of the attitude scores of the experimental and control groups between the pre-test and post-test I is significant at the .001 level.
15. A slight decrease in the attitude scores of both the experimental and control groups is observed between post-test I and post-test II.
16. A comparison of post-test I and post-test II reveals that the frequency of involvement in the promotion of breastfeeding slightly decreased in the experimental group but dropped to a bigger extent in the control group.
17. The quality of practice differs between the experimental and control groups as shown by the former's use of more variations in strategies, topics and venues in the promotion of breastfeeding. The experimental group had better ability to probe into problems and offer solutions as compared to the control group.
18. Correlation and regression analysis shows a significant relationship between knowledge and attitude scores and the practice in the promotion of breastfeeding.

Conclusion

The training and the manual were found to be acceptable and effective in improving the knowledge, attitude, and practice of health service providers. However, revisions on the manual and the training suggested by the users should be heeded to maximize the desired effect. Similarly, there is a need for regular follow-up through more workshops to be conducted to ultimately ensure retention of knowledge.

Recommendations

Based on the research results, the following recommendations are drawn:

1. The manual was considered by the health service providers as simple and useful. To strengthen the Department of Health's program on the promotion of breastfeeding, it is suggested that the manual be reproduced integrating the recommendations of the respondents in this study and distributed to all health service providers.
2. To ensure the proper and effective use of the manual the following measures are to be taken:
 - a. the distribution should be accompanied by a training program (2-3 days) focusing on the manual as a common instructional material;
 - b. follow-up workshops and/or group discussions be regularly held among the health service providers using the manual; and
 - c. in addition to the manual, audio-visual materials intended as instructional tools be furnished to service providers.
3. Discussions with the health service providers revealed that:
 - a. since doctors are more influential in promoting breastfeeding, it is recommended that they too, be afforded training on breastfeeding;
 - b. to maximize implementation of the program on the promotion of breastfeeding the support of local government units and other non-government agencies be enlisted by inviting them to conferences, workshops, symposia, fora, etc.

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Appendix - A

Appendix 1A. Personal Characteristics and Breastfeeding Experience and Training

Table 1A. Age													
EXPERIMENTAL							CONTROL						
Cotabato		Davao		Zamboanga		Total	Cotabato		Davao		Zamboanga		Total
f	%	f	%	f	%	f	f	%	f	%	f	%	f
1	3.9	1	1.8	0	0	2	1	4	0	0	0	0	1
10	38.5	9	16.7	8	25.8	27	9	36	8	15	5	15.6	22
11	42.3	19	35.2	16	51.6	46	10	40	17	31	12	37.5	39
4	15.4	15	27.8	5	16.2	24	3	12	16	29	10	31.2	29
0	0	7	13.0	1	3.2	8	2	8	10	18	4	12.5	16
0	0	3	5.5	1	3.2	4	0	0	4	7	1	3.2	5
26	100	54	100	31	100	111	25	100	55	100	32	100	112
33.92		39.94		36.48		37.39	32.58		41.72		40.00		40.12
7.72		10.77		8.76		10.58	10.09		12.31		9.41		11.22
Total													
Mean													
S. D.													

Table 1A. Civil Status													
EXPERIMENTAL							CONTROL						
Cotabato		Davao		Zamboanga		Total	Cotabato		Davao		Zamboanga		Total
f	%	f	%	f	%	f	f	%	f	%	f	%	f
4	15.4	9	16.4	5	16.1	18	3	12	4	7	6	18.8	13
21	80.8	40	72.7	24	77.4	85	21	84	43	79	24	75.0	88
0	0	1	1.8	0	0	1	0	0	3	5	2	6.5	5
1	3.8	5	9.1	2	6.5	8	1	4	5	9	0	0	6
0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	100	55	100	31	100	112	25	100	55	100	32	100	112
						100							100
Never Married													
Married													
Separated													
Widowed													
Others													
Total													

Table 1A. Religion

	EXPERIMENTAL								CONTROL							
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao		Zamboanga		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Catholic Islam Protestant	15	57.7	49	90.7	25	80.6	89	80.2	16	92.7	29	92.7	29	90.6	96	85.7
	11	42.3	2	3.7	2	6.5	15	13.5	9	36	1	1.8	2	6.2	12	10.7
	0	0	3	5.6	4	12.9	7	6.3	0	0	3	5.5	1	3.2	4	3.6
Total	26	100	54	100	31	100	111	100	25	100	55	100	32	100	112	100

Table 1A. Educational Status

	EXPERIMENTAL						CONTROL									
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao		Zamboanga		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
College Graduate	7	26.9	14	25.5	21	67.7	42	37.5	7	28	8	14.5	23	71.9	38	33.9
College Undergraduate	12	46.2	12	21.8	2	6.5	26	23.2	4	16	14	25.5	3	9.4	21	18.9
HS Graduate	3	11.5	13	23.6	5	16.1	21	18.8	4	16	11	20.0	2	6.2	17	15.2
HS Undergrad.	4	15.4	9	16.4	2	6.5	15	13.4	4	16	11	20.0	4	12.5	19	17.0
Elementary Graduate	0	0	6	10.9	1	3.2	7	6.2	4	16	7	12.7	0	0	11	9.8
Elementary Undergrad.	0	0	1	1.8	0	0	1	0.9	1	4	4	7.3	0	0	5	4.5
Others									1	4	0	0	0	0	1	0.8
Total	26	100	55	100	31	100	112	100	25	100	55	100	32	100	112	100

Number of Children

	EXPERIMENTAL						CONTROL							
	Cotabato		Davao		Zamboanga		Total		Davao		Zamboanga		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
None	1	4.6	1	2.3	1	3.7	3	3.3	1	4.5	0	3.7	2	2.0
1 - 2	8	36.4	11	25.6	12	44.4	31	33.7	7	31.8	8	48.2	28	28.0
3 - 4	5	22.7	20	46.5	9	33.3	34	37.0	9	40.9	19	22.2	34	34.0
5 - 6	7	31.8	8	18.6	2	7.4	17	18.5	4	18.2	13	18.5	22	22.0
7 - 8	0	0	2	4.7	3	11.1	5	5.4	1	4.5	6	3.7	8	8.0
9 - 10	0	0	1	2.3	0	0	1	1.1	0	0	4	0	4	4.0
11 - 12	1	4.6	0	0	0	0	1	1.1	0	0	1	3.7	2	2.0
Total	22	100.1	43	100	27	99.9	92	100.1	22	99.9	51	100.1	27	100.00
N	26		55		31				25		55		32	
Mean	3.50		3.65		3.07									
S. D.	2.74		1.84		2.06									

Table 1A. Ethnic Origin

	EXPERIMENTAL								CONTROL							
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao		Zamboanga		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Tagalog	1	3.8	10	18.2	2	6.5	13	11.6	1	4.0	4	9.0	2	6.3	7	6.9
Cebuano	5	19.2	33	60.0	3	9.7	41	36.6	9	36.0	37	84.1	4	12.5	50	49.5
Ilonggo	5	19.2	6	10.9	2	6.5	13	11.6	7	28.0	3	6.8	2	6.3	12	11.9
Zamboangueno	7	26.9	0	0.0	22	71.0	29	25.9	0	0.0	0	0.0	21	65.6	21	20.8
Maguindanaon	6	23.1	0	0.0	0	0.0	6	5.4	8	32.0	0	0.0	0	0.0	8	7.9
Tausog	0	0.0	0	0.0	1	3.2	1	.9	0	0.0	0	0.0	1	3.1	1	1.0
Ilocano	2	7.7	6	10.9	1	3.2	9	8.0	0	0.0	0	0.0	2	6.3	2	2.0
Total	26	99.9	55	100.0	31	100.1	112	100.0	25	100.0	44	99.9	32	100.1	101	100.0
N	26		55		31		112		25		55		32		112	

Table 1A. Dialect Spoken at Home

	EXPERIMENTAL						CONTROL									
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
English, Tagalog			2	3.6	1	3.8	1	1.9			1	1.9	1	4.0	1	.9
English, Cebuano			2	3.6	1	3.8	2	2.8			2	3.9			3	2.8
English, Chavacano					1	3.8	1	.9					0			
English, Tagalog, Cebuano			21	37.5	1	3.8	22	20.4	1	3.7	20	37.0	0		21	19.8
English, Cebuano, Chavacano					1	3.8	1	.9	0		0		0			
Cebuano			13	23.2	9	34.6	14	12.9	0		14	25.9	5	20.0	14	13.2
English, Tagalog, Chavacano	2	7.4					16	14.8	1	3.7	0				6	5.7
English, Tagalog, Cebuano, Chavacano					12	46.2	15	13.9	0		0		16	64.0	16	15.1
English, Tagalog, Cebuano, Ilonggo, Chavacano	1	3.7	2	3.6			10	9.2	0		1	1.9	0		1	.9
English, Tagalog, Cebuano, Maguindanaon	9	33.4	1	1.8			3	2.8	5	18.5	0		0		5	4.7
English, Chavacano, Tagalog	3	11.1					3	2.8	5	18.5	0		0		5	4.7
English, Tagalog, Cebuano, Ilonggo	3	11.1					3	2.8	1	3.7	0		0		1	.9
English, Tagalog, Cebuano, Ilonggo	3	3.7	6	10.7			9	8.3	4	14.8	6	11.1	1	4.0	11	10.4
English, Cebuano, Ilonggo, Maguindanaon	1	3.7					1	.9	0		0		0		0	
English, Tagalog, Maguindanaon	3	11.1	1	1.8			4	3.7	2	7.4	0		0		2	1.9
Tagalog, Cebuano, Maguindanaon	1	3.7					1	.9	1	3.7					1	.9
Tagalog, Cebuano			4	7.0			4	3.7	3	11.1	5	9.2			8	7.5
Tagalog			1	1.8			1	.9			1	1.9			1	.9
Cebuano, Ilonggo			1	1.8			1	.9			2	3.7			2	1.9
Tagalog, Chavacano			1	1.8			1	.9			2	3.7			2	1.9
Tagalog, Maguindanaon							0		1	3.7					1	.9
Tagalog, Cebuano, Ilonggo							0									
Chavacano							0		1	11.1			2	8.0	3	2.8
English, Tagalog, Cebuano, Ilonggo, Ilocano	1	3.7	1	1.8			2	1.8							2	1.9
English, Tagalog, Cebuano, Maranao	1	3.7					1	.9								
Total	27	100	56	100	26	99.8	109	100	27	99.9	54	100	25	99.7	106	99.7

Appendix 1A. Dialect Spoken at Work

	EXPERIMENTAL						CONTROL									
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao		Zamboanga		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Tagalog	3	11.1	3	6.1			6	5.6	3	11.5	2	6.4			5	6.3
Cebuano	1	3.7	27	55.2	2	6.5	30	28.0	1	3.9	12	38.7			13	16.4
Chavacano					4	12.9	4	3.7					7	31.8	7	8.9
English, Chavacano					4	12.9	4	3.7					5	22.7	5	6.3
English, Tagalog	1	3.7	2	4.1	2	6.5	5	4.7	2	7.7	1	3.2	1	4.5	4	5.1
Tagalog, Maguindanao	7	30.0	1	2.0			8	7.5	5	19.2					5	6.3
Cebuano, Maguindanao	1	3.7					1	.9	1	3.8					1	1.3
Tagalog, Cebuano	1	3.7	6	12.2			7	6.5	8	30.8	5	16.1			13	16.4
English, Cebuano			2	4.1			2	1.9								
Tagalog, Cebuano, Chavacano	1	3.7			5	16.1	6	5.6			1	3.2	2	9.1	3	3.8
English, Tagalog, Chavacano	1	3.7			9	29.0	10	9.3					3	13.1	3	3.8
English, Tagalog, Cebuano	1	3.7	7	14.3	1	3.2	9	8.4			4	12.9			4	5.1
English, Tagalog, Maguindanao	2	7.4					2	1.9	1	3.8					1	1.3
English, Cebuano, Maranao	1	3.7					1	.9								
English, Tagalog, Cebuano;																
Chavacano	1	3.7	1	2.0	3	9.7	5	4.7	1	3.8					1	1.3
English, Tagalog, Chavacano,					1	3.2	1	.9					3	13.6	3	3.8
Tausug																
English, Tagalog, Cebuano,																
Ilonggo	1	3.7					1	.9	2	7.7	1	3.2			3	3.8
English, Tagalog, Chavacano,																
Mag.	2	7.4					2	1.9								
English, Cebuano, Ilonggo, Mag.	3	11.1					3	2.8	1	3.8					1	1.3
English, Tagalog, Cebuano,																
Chavacano, Tausog									1	3.8	1	3.2			2	2.5
Tagalog, Chavacano											2	6.4	1	4.5	1	1.3
Cebuano, Chavacano											2	6.4			2	2.5
English											2	6.4			2	2.5
Total	27	100	49	100	31	100	107	99.8	76	99.7	31	99.7	22	99.8	79	100

Table 1A. Breastfed Child

	EXPERIMENTAL						CONTROL					
	Cotabato		Davao		Zamboanga		Cotabato		Davao		Zamboanga	
	f	%	f	%	f	%	f	%	f	%	f	%
Yes	17	81.0	41	93.2	4	15.4	19	86.4	48	94.1	5	18.5
No	4	19.0	3	6.8	22	84.6	3	13.6	3	5.9	22	81.5
Total	21	100.00	44	100.0	26	100.0	22	100.0	51	100.0	27	100.0
N	26		55		31		25		55		32	

Table 1A. Received Formal Instruction on Breastfeeding

	EXPERIMENTAL						CONTROL					
	Cotabato		Davao		Zamboanga		Cotabato		Davao		Zamboanga	
	f	%	f	%	f	%	f	%	f	%	f	%
None	0	0	0	0	0	0	0	0	1	1.8	0	0
Some	0	0	2	18.2	6	28.6	0	0	9	16.4	7	29.2
Much	2	66.7	6	54.5	10	47.6	0	0	30	54.5	11	45.8
Very Much	1	33.3	3	27.3	5	23.8	1	100	15	27.3	6	25.0
Total	3	100	11	100	21	100	1	100	55	100	24	100

Table 1A. Received Additional Training (Informal) on Breastfeeding

	EXPERIMENTAL						CONTROL					
	Cotabato		Davao		Zamboanga		Cotabato		Davao		Zamboanga	
	f	%	f	%	f	%	f	%	f	%	f	%
No	8	30.8	14	25.5	24	77.4	6	24	9	16.4	24	75
Yes	18	69.2	41	74.5	7	22.6	19	76	46	83.6	8	25
Total	26	100	55	100	31	100	25	100	55	100	32	100

Table 1A. Distribution of Workers by Type of Training and Sponsoring

	EXPERIMENTAL						CONTROL					
	Cotabato		Davao		Zamboanga		Total		Cotabato		Davao	
	N	%	N	%	N	%	N	%	N	%	N	%
N	18		41		7		66		11		21	
1. Barangay Health Working Department of Health Catholic Church (CHC/CCF-CRS/JSC/MSF/PSF)	3	16.7	29	70.7			32	48.5	3	27.3	1	16.7
2. Community Health Working/Department of Health NDU-CES	5	16.7					5	7.6	1	9.1	1	16.7
3. Nutrition Training Nutrition Council Catholic Church NDU-CES	2	11.1	4	9.8			6	9.1	1	9.1	1	16.7
4. Mothers Class Department of Health CCF/CRS School of Midwifery	5	27.8	9	22.0			14	21.2	2	18.1		
5. GOBBII/GOBI NDU-CES Catholic Church	5	27.8	12	31.7			18	27.3	4	36.4		
6. Hilot Training Department of Health AHC	2	11.1	4	9.8			6	9.1				
7. Under six training/Primary Health Care Department of Health NDU-CES GO	4	22.2	1	2.4	1	14.3	6	9.1	9	81.8		
8. Katiwala DPF/DMSF	5	12.2					5	7.6				

Appendix 2A
Frequency of Manual Use

Frequency	DAVAO		COTABATO		ZAMBOANGA		TOTAL	
	N	%	N	%	N	%	N	%
Regularly	4	7.6	5	20.8	4	13.3	13	12.2
As Needed	12	22.6	4	16.7	15	50.0	31	29.0
Seldom/rarely once a month	5	9.4	4	1.67	0	0.0	9	8.4
More than once a week/often	6	11.3	3	12.5	3	10.0	12	11.2
Sometimes/once a week	15	28.3	6	25.0	2	6.7	23	21.5
Very often/everyday	3	5.7	0	0.0	3	10.0	6	5.6
Did not Answer	8	15.1	2	8.3	3	10.0	13	12.1
Total	53	100.0	24	100.0	30	100.0	107	100.0

Appendix 3A
Manner of Use of Manual

Manner of Use	DAVAO		COTABATO		ZAMBOANGA		TOTAL	
	N	%	N	%	N	%	N	%
1. as personal reference insti- tutional aid	6	25.0	10	19.9	13	43.3	29	27.1
2. as resource material for client	3	22.5	5	9.4	3	10.0	11	10.3
3. as varied aid for clients	1	4.2	5	9.4	5	16.7	11	10.3
Total N	10 24		20 53		21 30		41 97	

Appendix 4A.
Comments on the Manual

Comments	DAVAO		COTABATO		ZAMBOANGA		TOTAL	
	N	%	N	%	N	%	N	%
1. simple and understandable	1	4.1	2	3.8	11	36.7	14	13.1
2. informative	0	0	5	9.4	5	16.7	10	9.3
3. useful/reliable good	3	12.5	10	18.7	6	20.0	19	17.8
4. comprehensive	0	0	1	1.9	1	3.3	2	1.9
5. attractive/beautiful	2	8.3	2	3.8	3	10.0	7	6.5
5. not clean/very complicated	0	0	1		0		1	1.9
Total	6		21		26		53	
N		24		53		26		107

Appendix 5A. Recommendations to improve the Manual

Recommendations	DAVAO		COTABATO		ZAMBOANGA		TOTAL	
	N	%	N	%	N	%	N	%
1. reproduce more copies	0	0.0	4	7.6	3	10.0	7	6.5
2. make comics on breastfeeding	0	0.0	0	0.0	3	10.0	3	2.8
3. include oketani massage	0	0.0	0	0.0	1	3.7	1	.9
4. explain prolactin cycle	0	0.0	0	0.0	2	6.7	2	1.9
5. translate to dialect	1	4.1	1	1.9	1	3.3	3	2.8
6. simplify technical words	0	0.0	5	9.4	0	0.0	5	4.7
7. enrich content	0	0.0	0	0.0	3	10.0	3	2.8
8. change color of some pictures	5	20.8	1	1.9	0	0.0	6	5.6
9. improve cover pages	0	0.0	0	0.0	2	6.7	2	1.9
10. more and bigger pictures/illustrations	4	16.7	4	7.6	7	23.3	15	14.0
11. produce materials for mothers	1	4.2	1	1.9	0	0.0	2	1.9
12. English version is preferred	0	0.0	0	0.0	1	3.3	1	.9
13. include drugs that can be taken	1	4.2	0	0.0	1	3.3	2	1.9
14. include nutrition	0	0.0	0	0.0	2	6.7	2	1.9
N		24		53		30		107

Appendix - B

Appendix B. Reports of the Training–Workshops in Three Research Areas.

A Report on the Training Program on the Use of the Manual on Breastfeeding in Cotabato City

Introduction

The training program on the use of the Module on Breastfeeding lasted the whole day of January 26, 1989. This was the third training scheduled for the project – the first being in Davao City and the second in Zamboanga City. As per agreement by the project staff, the training was exclusively for the benefit of the experimental group of breastfeeding promoters who, a week before the training, were given each a copy of the experimental manual developed by the project staff.

The training was attended by 26 breastfeeding promoters coming from 4 health centers in the city. It was held at the 3rd floor of the new library building of Notre Dame University from 8:00 in the morning to 5.00 in the afternoon. Also in attendance were the 2 consultants from NTTC, the local breastfeeding specialist – Dr. Teresita Mansilla, the project coordinator, and the project director for Cotabato.

Proceedings

A. The preliminaries

The training started with an orientation on the mechanics of the project. The project coordinator, Mrs. Ofelia Durante, explained the role of the training on the whole research project. The contribution of the participants to this endeavor was emphasized. It was impressed upon them that after having gone through the training, they would become experimental users of the manual to be able to evaluate, later on, its effectiveness.

After the orientation, the participants were asked to break into 2 groups for the workshop. The facilitators for the workshop were Mrs. Ofelia Durante and Mrs. Eva Tan.

B. Workshop I

The first workshop had the following outputs:

1. identification of common problems in the promotion of breastfeeding; and
2. discussion of how the breastfeeding manual can be used to solve these common problems.

Both groups had a lively brainstorming session on the two topics. A lot of misconceptions were brought out in the process of identifying problems. It was a learning experience for the participants. After the session, the 2 groups met again where the reports on the outputs of Workshop I were presented on Manila paper. The reports of Groups I and II are as follows:

Table 1. Workshop Output of Group I

Problems Encountered	Solutions
1. figure consciousness and fear of sagging breasts	1. advice mother to refer to manual on pages 7 and 53
2. painful breast	2. page 48
3. salty, thin, or inadequate milk	3. page 48
4. inverted, small, large nipple	4. pages 49 and 53
5. cracked and sore nipple	5. page 50
6. sick mother and mothers who had cesarian delivery	6. page 53

7. breast with cyst	7. no solutions
8. mothers with milk supply before delivery	8. no solutions
9. wrong beliefs/misconceptions	
a. colostrum should not be fed to the baby	a. page 5
b. tied mothers should not breastfeed	b. page 54
c. salty, sour food are bad for mothers	c. page 54
d. mothers with mental problems should not breastfeed	d. page 22
e. mothers should eat papaya to produce milk	e. no solutions
f. breastfeed only inside the house	f. no solutions
g. two babies should not feed at the same time	g. no solutions
h. drugs have harmful effect on the baby when taken by the mother	h. page 50

Table 2. Workshop I Output of Group II

Problems Encountered	Solutions
1. breastfed babies having diarrhea	1. no solutions
2. fear of disfigurement	2. page 7
3. schedule of breastfeeding for working mothers	3. page 39
4. salty milk	4. page 54
5. breastfeeding during pregnancy	5. no solutions
6. balanced nutrition for the mother	6. page 14
7. small breast	7. page 53
8. sick mothers	8. page 53
9. inverted nipples	9. page 34
10. breastfed baby looks thin	10. page 25
11. cracked nipples	11. page 50
12. nutrition misconceptions	12. page 25
13. drugs taken by mother	13. page 50
14. resistance to male health workers	14. no solutions

The reports were followed by reactions from the participants. The consultants and the specialist helped explain the solutions for the items missed during the grouping.

The explanations given and which were not covered by the manual were the following.

1. physiology of lactation – in answer to why milk comes out only after delivery may also be an answer to milk supply before delivery and to why a grandmother can breastfeed a grandchild.
2. detailed explanation of the prolactin cycle-- and how breastfeeding can be used successfully for birth control.
3. cultural barriers faced by male health workers.

In the process of discussing the above, problems mentioned which cannot be solved by the participants were clarified.

C. Workshop II

The second workshop involved the selection of a problem and the appropriate strategy suggested in the manual for demonstration on how such problem can be solved. After a preparation of one hour, the two groups did a role play on their selected problem.

Group I

The first group portrayed a husband and his wife about to give birth to their first child. They went to the clinic for pre-natal examination. The midwife in the clinic advised them to prepare for breastfeeding, but the wife refused for fear of losing her figure. The husband supported her.

The midwife, then, explained through personal counselling the benefits of breastfeeding and the advantages it provides in regaining faster the health of the mother. The group presented another scene where the mother delivered and was breastfeeding her baby. The midwife arrived and called her attention to the benefits of breastfeeding and how her fears were untrue.

Group II

The second group depicted a community gathering where the mothers were discussing various misconceptions on breastfeeding. When a health worker appeared, they consulted with her. The health worker started to carry on a group discussion session on the benefits of breastfeeding and corrected all their misconceptions by pointing out in the manual the proper explanations for each one of them.

After the role plays, the participants had an interaction-reaction. The consultants also expressed their views on the role plays. It was explained that they can use the role play as an effective tool in their promotion of breastfeeding.



D. Closing

At the closing ceremonies, each participant was awarded a certificate of participation. Their continued cooperation was solicited for the duration of the project.

Proceedings of the Training--Workshop
Western Mindanao State University
January 22, 1989

Introduction

The training program on the use of the Manual on Breastfeeding was conducted in Zamboanga City with 31 service providers attending. Two members of the staff of the National Teachers Training Center of the University of the Philippines and a local breastfeeding expert were invited to act as consultants. The training was also attended by the project coordinator and two project directors.

Proceedings

The training started with an orientation to the project and the training program given by the project coordinator. She emphasized the need for the active participation of the workers in the program to be able to help improve the health conditions of the people.

This was followed by small group discussions where the participants were divided into three groups to discuss the problems encountered by the health workers in promoting breastfeeding and the solutions offered.

The results of the discussions are as follows:

Problems	Possible Solutions
Baby/Infants	
1. Loose BM	— Hygienic practices while BF
2. Congenital defects:	— proper technique of BF refer module p. 52
a) cleft lips	
b) cleft palate	
3. Intolerance to breast	— Referral to pediatrician
4. Slow weight gain	— Referral
Promoter:	
1. Competition between breastfeeding promoters and milk formula promoters.	— Incentives to be given to health workers in the promotion of breastfeeding or formula preparation.
	— Strict implementation of milk code.

GROUP 2

Problems in the Promotion of BF	Possible Solutions
Mothers:	
1. Working mothers	— Store breastmilk
2. Sick mothers	— For T. B. cases, BF is recommended, except for mothers with positive sputum exam.
3. Mothers who wish to maintain their figures	— Counselling, involving both husbands and wives. Role model and posters.
4. Mother's nipple too big/small than baby's mouth	— Training of baby to adjust mother's breast
5. Inverted nipple	— Nipple exercises as early as the prenatal period.

- | | |
|--|--|
| 6. Taking oral contraceptives | – advice mother to consult physician |
| 7. Lack of knowledge/information about BF | – Advice mother to consult physician for alternative methods |
| 8. Misconceptions on milk production (beliefs) | – Same as No. 7 |
| 9. They give purgatives before BF | – Same as No. 7 |

Infants:

- | | |
|--|---|
| 1. Infants bites mother's breast | |
| 2. Baby refuses mothers' Breast | – Training of baby to adjust to mother's breast |
| 3. Congenital defect (e. g., cleft palate) | – Store milk and feed with teaspoon |

Problems	Suggested Solution
I. Problems Related to Couple	
1. Unwillingness of the husband because of: <ul style="list-style-type: none"> a. inconvenience b. fishy odor, messy c. sagging breast 	<ul style="list-style-type: none"> – Education the husband – Husband should accompany his wife during prenatal visit
II. Problems Related to Breastfeeding Mother	
1. Insufficient milk supply <p>Related to inability to buy nutritious food</p>	– Health education on selection of affordable foods
2. Sickly mother	– Seek the help of the nutritionist
3. Inadequate knowledge on the part of the mother about BF	a. health educ. information dissemination <ul style="list-style-type: none"> a.1 lecture a.2 mothers' class
4. Working mothers discomfort experience during breastfeeding <ul style="list-style-type: none"> – Due to encouragement 	<ul style="list-style-type: none"> – Strategies: a. Storing demonstrate sterilization technique
III. Problem Related to Baby/Infant	
1. Presence of Cleft palate	– Use nipple/dropper
2. Babies having poor sucking reflex ex. pre-mature infants	– Use of dropper
3. Giving glucose sugar, baby becomes used to it then refuses to suck	
4. No means of storing milk	– Health education
5. inverted nipple	

GROUP 3

Problems	Solutions
Mothers:	
1. Inverted or flat nipples	– Nipple exercises done during the last trimester
2. Fear of sagging/deforming breasts	– Proper techniques of breastfeeding and measuring of fitting brassieres
3. Knowledge deficit on the benefits derived from breastfeeding	– Conduct mother's class during pre-natal session
4. Inadequate supply of milk	<ul style="list-style-type: none"> – Identify the causes such as: a. nutrition b. techniques c. attitudes towards BF

5. Inconvenience of working mothers in term of scheduling

6. sickly mother

7. Malnourished mothers

- Storing of milk in refrigerator
- No refrigerator use indigenous material
- Stress the importance of good and proper treatment
- Proper diet

These were presented to the groups in a plenary session. Open forum, reaction and interaction were then conducted by the project director with the consultants answering the questions raised by the participants.

The second workshop involved the selection of a problem and identifying the appropriate strategies for solving the problem using the manual. This was shown in a role play.

Group I

The first group identified the problem of a husband opposed to his wife's breastfeeding their baby. The role play showed a home visit made by a community-based health worker for the purpose of convincing the couple to breastfeed their child.

Group II

The second group portrayed the need of a pregnant mother for pre-natal consultation. They depicted two scenes; the first presented the difficulty of a delivery when a mother did not undergo pre-natal check-up,; and the second showed the ideal situation of clinic visit by pregnant mother for pre-natal check-up.

Group III

The third group role-played a community group discussion. A group of mothers together with the health worker tried to persuade a pregnant woman to breastfeed.

After the role plays, interaction between the participants and consultants was conducted. The prolactin cycle was discussed and a sharing on the psychology of lactation was made by Dr. Floreindo, the breastfeeding consultant.

The training ended with an appeal for the support and cooperation of the health workers for the project and the distribution of certificates of participation.





PROCEEDINGS OF THE TRAINING—WORKSHOP ON THE USE OF THE BREASTFEEDING MANUAL ATENEO DE DAVAO UNIVERSITY JANUARY 19, 1989

Registration

Out of 55 invited participants, 53 registered and attended the training-workshop.

The day's activities started at 8:45 a.m. with a welcome from Mrs. Marlina C. Lacuesta, after which a prayer and introduction of the visitors and project staff followed.

An orientation of the training—workshop was given by the project coordinator (Mrs. Ofelia Durante). She likewise presented the objectives of the workshops as follows:

1. identify common problems in the promotion of breastfeeding;
2. suggest ways in which the manual can be used to solve the common problems; and
3. apply selected strategies in promoting breastfeeding.

After the orientation, the participants were grouped into four for the workshop.

Demonstration

The four groups were asked to present/demonstrate the strategies they used in solving the problems encountered in promoting breastfeeding.

Group 1 — Problem	:	Inverted nipples
Situation	:	The problem was discovered during the pre-natal consultation of a pregnant mother. She was advised to exercise her nipples.
Group 2 — Problem	:	scanty milk supply. The husband was unemployed while the wife helped support the family by working as a "labandera".
Strategy	:	one-on-one consultation
Group 3 — Problem	:	inverted nipples
Strategy	:	teach the mother how to exercise the nipple and to breastfeed correctly. A lecture follows.

Group 4 – Problem	:	working mother
Strategy	:	home visits and sharing of experiences on how to breastfeed even if mother is working.

Presentation of the Results of Workshop

Group I

Problems	Solutions
1. Lack of education/knowledge – misconception/superstitious belief	– conduct mothers class/ – application of the strategies such as role play, group discussion, demonstration, etc.). – proper dissemination of information concerning.
2. Absence of milk/small amount of milk will come out after giving birth causes the	– mother should be given information about the “prolactin cycle” – mothers should be properly motivated. – during the pre-natal stage mothers should be told about the advantages of breastfeeding (cheaper, promotes closer relationship with the child and mother and serves as protection against ailments) – must be instructed to take more fluids to make the milk nutritious and large in quantity.
3. Deformation of body figure and breast (mostly supported by husbands)	– breastfeeding makes the uterus contract, thus, making the body return to its normal figure.
4. Problem about the working rates (because of their job, they can't feed their baby in their breast).	– giving stored milk to the baby – have the determination, desire and confidence: positive attitude and physiological state. – relaxation, exercise before giving the milk – store the milk/schedule of feeding
5. inverted nipple	– nipple exercises, rolling of nipple; stretching nipple.
6. salty milk	– health education; knowledge on breastfeeding.

Group 2

Problems	Solutions
1. Lack of education and knowledge on breastfeeding	– to organize mothers' class, group discussions, and home visits emphasizing breastfeeding – health teaching to mother during pre-natal post-natal consultation or during PMC class – IEC dissemination
2. Working Mothers	– teach the mother on the proper collection and storage of breastmilk. – teach the mother on the proper giving of stored expressed milk to the baby.
3. Mothers stop breastfeeding due to use of FP contraceptives	– motivate mothers to use IUD, etc. instead of pills.

4. Inadequate supply of milk due to psychological factors.

- let the mother express her feeling.
- discuss the advantages/benefits of breast-feeding.
- advise mother on proper preparation and techniques of breastfeeding.

Group 3

Problems	Solutions
<p>I. Mothers/Parents</p> <ul style="list-style-type: none"> – low education background – disfigurement of her body; inverted nipple; working/busy mothers; negative of husband; insufficient supply of breastmilk; suffering from illness; etc. * misconception <ul style="list-style-type: none"> – if mother eats sour foods while breastfeeding, it will cause curdling of breastmilk – mother should not breastfeed immediately after taking early morning bath; and when she is tired; if she is caught in the rain because baby will get sick – one breast contains water and the other is milk mother's milk is salty * beliefs and traditions <ul style="list-style-type: none"> – “Lihi” – mother's first foods after delivering should be mixed with papaya, buko, etc. so she'll produce more breastmilk; after delivery serve “tsokolate” to mothers and food should be received with two hands so both breast will produce milk; to initiate milk production, mother's breast must be massaged with fresh “gata ng niyog” – on wet nursing, must be on opposite sex only – lactating mothers should avoid eating foods that will cause skin rashes/itchiness to the baby, e. g. eggplant. 	<ul style="list-style-type: none"> – conduct lectures/classes of puroks/by groups on breastfeeding using the manual. – reproduction/development of visual aids based on information in the manual – group discussion – conduct A. P. classes during consultation clinic. – IEC dissemination through – group discussion (building on what the mothers know) – counselling – IEC materials (flipcharts, posters, and leaf-lets). – demonstration – film showing – conduct one-on-one counselling – health education – small group discussion with testimonial presentation.
<p>II. Baby</p> <ul style="list-style-type: none"> – oral deformities, e. g. cleft palate, perforated palate – orphaned – premature (in terms of birth weight) 	<ul style="list-style-type: none"> – breastmilk be given to infants by dropper or NGT while in the hospital. – wet nursing to orphans; provision of a milk bank. – NGT tube feeding of breastmilk while in hospital and to continue breastfeeding.
<p>III. Implementors</p> <ul style="list-style-type: none"> – inadequate knowledge, attitude and skills on breastfeeding, e.g. structures and functions 	<ul style="list-style-type: none"> – CE by reviewing the manual

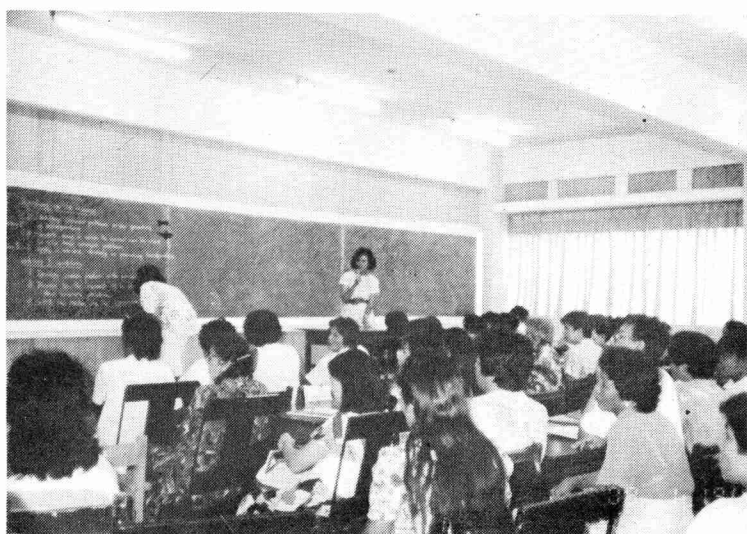
- of breast and psychology of milk production
- negative attitudes
- lack of strong policy statement from local government.
- lack of IEC materials
- multinational firms pampering some physicians with samples, etc.
- credibility and respectability of the promoter
- commitment
- invite local officials (GO's and NGO's) to conferences, symposia, fora etc. on the implementation of breastfeeding
- conduct workshop for production and development of IEC materials
- reproduction of E.O. 51 for distribution to GO's and NGO's

Group IV

Problems	Solutions
1. One month breastfeeding because the breasts drained	– continue breastfeeding; health education through mothers class, home visits, etc.
2. Working mothers (bottle feeding)	– manual expression of milk in the office
	– express milk in a sterilized bottle then refrigerate
	– breastfeed baby before leaving for work and leave instruction when to feed the baby
3. “Magbutod ang baby” is breastfeed right after mother arrived from work	– wrong belief
	– relax then breastfeed
4. Mother will reduce in size if breastfeeding	– conduct mother's classes and home visits
5. Painful nipples; cracked nipples	– proper cleaning and massage during pre-natal and after birth
	– continue breastfeeding; put oil
6. inverted nipple	– massage or exercise during pregnancy pull nipple in various directions everyday
	– use nipple shield
7. loose bowel movement of the child	– health education; continue breastfeeding; observe the weight of the baby
8. salty milk	– health education; the saltiness of the milk will be on the first few days only. It will disappear later
9. One breast is bigger than the other	– balanced breastfeeding

Synthesis

1. The objectives of the day's activity were:
 - a. identify the common problems in the promotion of breastfeeding;
 - b. and suggest ways in which the manual can be used to solve the common problems;
 - c. apply selected strategies in promoting breastfeeding.
2. The problems identified were broadly categorized into:
 - a. those related to breastfeeding mothers
 - b. those related to the parents of breastfeeding mothers
 - c. those related to the baby
 - d. those related to the implementors
3. Given those problems, the participants tried to solve them by using the manual and the specific communication strategy. This attested to their having read the manual.
4. Generally, based on the reports of the four groups, the four most mentioned problems encountered in breastfeeding were: lack of education, misconceptions, working mothers and salty milk.
5. In the light of the stated objectives, the workshop was regarded as a success. This could be attributed to the cooperation extended by the participants and their experiences in promoting breastfeeding.



Appendix - C

A Manual on the Promotion of Breastfeeding for Health Service Providers



A Manual on the Promotion of Breastfeeding for Health Service Providers

Prepared by

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Grateful acknowledgements are likewise due to: the Department of Health, breastfeeding consultants, the staff of the National Training Center of the University of the Philippines College of Medicine; and the members of the core groups in the three research areas.

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Introduction

This Manual on the promotion of breast-feeding is primarily intended for the use of health service providers (nurses, medicines and community-based workers) in the cities of Cotabato, Davao and Zamboanga.

In its preparation, the social science researchers were assisted by medical and nursing experts. The following processes were carefully observed:

- a) collection of existing materials on the subjects including books, booklets, brochures, leaflets, etc;
- b) review of these materials, noting down the following:
 - b.1. common messages
 - b.2. uncommon messages
 - b.3. inconsistent/conflicting messages
- c) conduct of a baseline survey among 60 service providers in the three cities involved in the study;
- d) presentation and discussion of the review findings and the baseline survey results among the members of the core

groups (doctors, nurses, medicines, community-based health workers) in the three research areas;

- e) from this discussion, an outline of the Manual was prepared by the core groups and the research team in consultation with the Health Education and breast-feeding specialists;
- g) the Manual was then prepared by the research team using the above mentioned research materials and reviewed by the core group members and the health education, breastfeeding and evaluation specialists.

The content, illustrations and methodologies in this Manual have been designed to suit the general educational profile of the would — be users. It is, therefore, hoped that health services providers find extensive use for the Manual in their efforts to promote breastfeeding in their respective areas of service, responsibility and influence.

Module 1

Foundation for Effective Milk Production and Breastfeeding

INTRODUCTION

Recent findings from the 1978 World Fertility Survey (WFS) indicate that breastfeeding appears to be declining in all parts of the world including the Philippines (Simpson, 1983). Decline in breastfeeding in less developed countries like the Philippines is of public health concern for two main reasons: 1) breast milk substitutes often are over diluted which may cause stunted growth and contribute to infant mortality, 2) breast milk substitutes prepared under unhygienic conditions may increase infant mortality due to infection and diarrhea.

Central to these findings is the role played by the health care providers and breastfeeding. The important role played by health workers has often been cited as a factor influencing breastfeeding.

However, health workers' lack of information and negative attitudes have been identified as obstacles to successful breastfeeding. Hong observed that many health workers only pay lip service to supporting breastfeeding and most of them hardly ever discuss the problems and benefits of breastfeeding with expectant mothers (Hong, 1984). Furthermore, Bernales, in her study among the traditional and modern health professionals revealed that the lack of adequate

information on breastfeeding among traditional hilots and midwives partly account for the decline of breastfeeding practice in the Philippines (Bernales, 1984).

A review of current materials on breastfeeding that are being used by health service providers in Mindanao show some inconsistent messages. This was also established in focus group discussions conducted among health providers in three Mindanao cities, namely: Cotabato, Davao and Zamboanga. Several misconceptions or cultural practices affecting breastfeeding practice have surfaced during the said focus group discussions. These show the extent of misinformation or lack of it among health service providers on the benefits and practice of breastfeeding.

This module provides the basic information that health workers must know that will help them effectively perform their role in promoting breastfeeding and giving proper health teachings/advice to mothers in the practice of breastfeeding.

It covers 3 areas, namely: 1) the structure and function of the breast, 2) beneficial properties of breastmilk, and 3) the benefits of breastfeeding.

OBJECTIVES

At the end of the lesson, the user should be able to:

1. Identify the parts of the breast involved in milk production and their respective functions.
2. Explain the mechanisms involved in the production of milk.
3. Justify the benefits derived by the infant and mother from breastfeeding.

RECOMMENDED PREPARATION

Knowing the meaning of the following terms will facilitate one's understanding of the content of this module. The terms are given in the sequence they are encountered in the module.

1. lactiferous — yielding milk
2. sebaceous — oily, fatty
3. nursing — feeding the infant at the breast
4. reflex — an involuntary exercise of function, in a part, excited in response to a stimulus applied to the periphery and transmitted to the nervous centers in the brain or spinal cord.
5. flocculent — denoting a fluid
6. formula — a prescribed preparation of artificial milk
7. solute — the dissolved substance in a solution
8. phagocytic — relates to the property of ingesting bacteria, foreign particles and other cells
9. enteroviruses — viruses which infect or propagate themselves in the alimentary canal and spread by fecal contamination
10. reciprocal — mutual, shared

Reference: Williams and Wilkin's Company, Steadman's Medical Dictionary, Baltimore: Williams and Wilkin's Co., 1972.

I. STRUCTURE AND FUNCTION OF THE BREAST

This section deals on 2 aspects, namely: 1) the structure and 2) function of the breast. A knowledge of the structure and function of the breast is needed to understand the process of lactation.

A. Structure of the Breast

The breasts are glands made up of glandular tissue, surrounded by protective fatty tissue and separated from the underlying chest muscles and ribs by connective tissue. They are also called mammary glands.

The size and shape of the breast vary a great deal among individuals. Generally, they are dome-shaped and have an average weight of 100-200 grams. They start growing during puberty, reaching full development during pregnancy. They secrete minimally in late pregnancy and maximally after child birth during lactation, when they increase two to three times in weight.

The breast contain structures (illustrated in Figure 1) which have the appearance of small tree trunks, branches and leaves. The "leaves" are a group of tiny grape-like sacs called alveoli, which are composed of milk secreting cells. The "branches" are the ductules in which the milk secreted in the alveoli passes. Each ductule

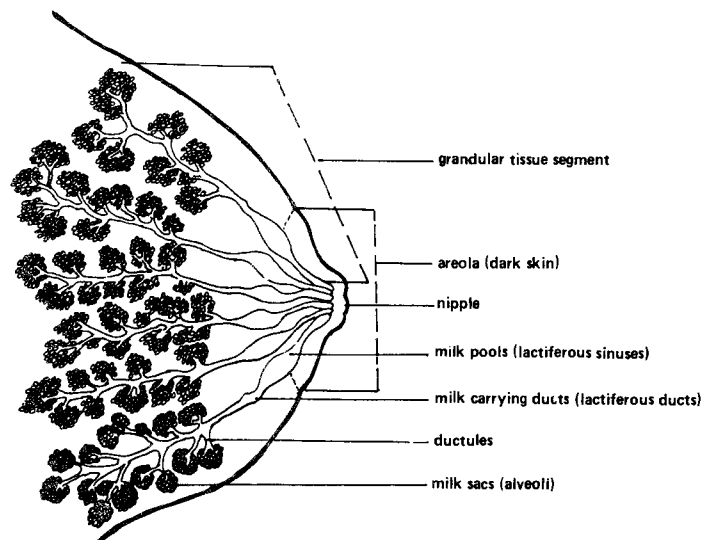


Figure 1. Structure of a Human Breast

Adapted from Riordan, J. A. *Practical Guide to Breastfeeding* St. Louis, Toronto, London: The CV Mosby Co., 1983, pp. 21.

merge into a larger collecting lactiferous duct, which can be considered the trunk of the tree. The lactiferous ducts then collect into widened milk pools or storage areas called lactiferous sinuses located behind the nipple and areola.

The nipple and areola are parts of the breast visible externally. The nipple is the spout into which the lactiferous sinuses open. The nipple is well supplied with nerve endings, which, when stimulated by the nursing baby, induce uterine contractions that aid in the return of the uterus to its normal size. The blood vessels supplying the nipple cause it to become erect when stimulated by various means.

The basic units of the glandular tissue is the alveolus. As mentioned earlier, this is composed of a cluster of milk-secreting cells. Each cluster of these cells is surrounded by myoepithelial cells which contract and help to force out the milk in the alveoli into the lactiferous ductules and the rest of the duct system. A cross-section of an alveolus is shown in Figure 2.

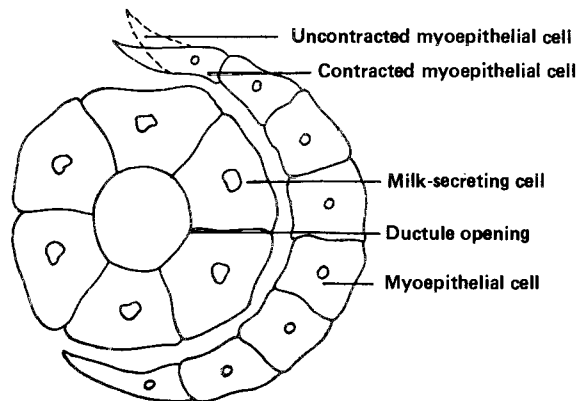


Figure 2. A cross Section of an Alveolus

B. Function of the Breasts

The main function of the breast is milk production. These are two reflexes that control

milk production: milk producing reflex and let down reflex.

The production starts with the baby's sucking the breasts. As he sucks, message is sent to the brain to produce 2 hormones. The hormone prolactin stimulates the milk secreting cells in the alveoli to generate milk. The more prolactin is released, the more milk is produced.

The other hormone, oxytocin, stimulates the myoepithelial cells around the milk secreting cells to contract so that milk is forced out towards the nipple. This is known as the let-down reflex. The let-down reflex works well if the mother is relaxed and free from stress, worries, and anxiety. As long as the breast is sucked, this reflex continues. On the other hand, the prolactin reflex may continue even if the baby is not sucking.

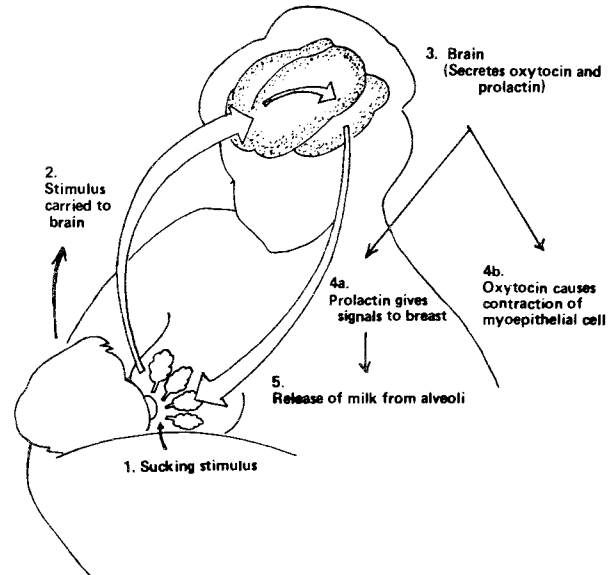


Figure 3. Mechanism of Milk Production

Adapted from Riordan, J. A Practical Guide to Breastfeeding St. Louis Toronto, London: The CV Mosby Co., 1983, p. 23.

A clear understanding of the prolactin cycle will help the health worker in giving "good advice" to nursing mothers in terms of duration.

and frequency of feedings. As shown in Figure 4, the prolactin level reaches its optimum level after 30 minutes. If the mother breastfeeds for only 15 minutes (A), the prolactin level does

- 1 — first breastfeeding
- 2 — 2nd breastfeeding
- 3 — 2nd breastfeeding after 3 hours

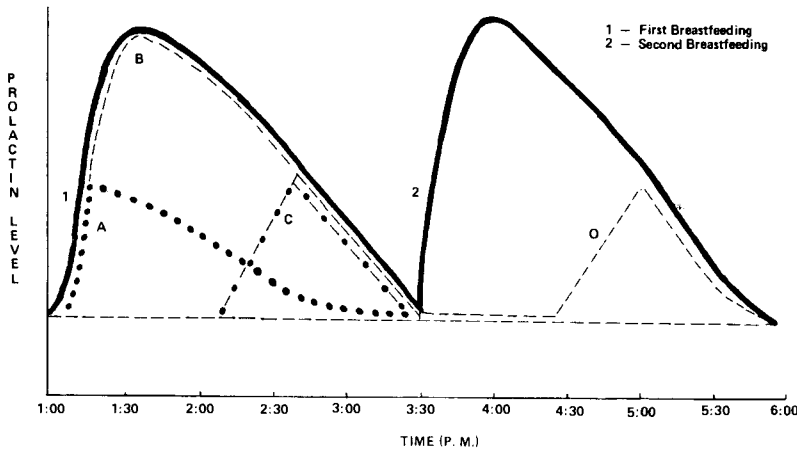
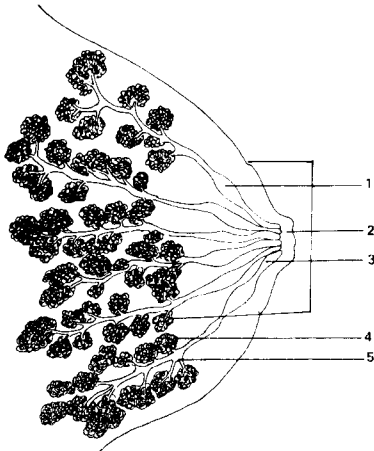


Figure 4. Prolactin Cycle

not reach its usual peak and therefore, the volume of milk is lower. If the mother breastfeeds for 1 hour, (B) the breasts may not yield to the baby's sucking anymore and the infant may not get adequate milk. The interval between two feedings that follows well the prolactin cycle is every 2 1/2 hours when the curve flattens, indicating the need to start a new cycle. A 3-hour interval results in a low volume as shown in (3).

REVIEW QUESTIONS I

- A. Label the part of the breast and state briefly its use or function.



- B. Outline in sequence the mechanism involved in the production of milk.

- C. Supply the missing word(s) to complete the statement.

- 1-2. The prolactin cycle is a good guide to advise mothers on the _____ and _____ of breastfeeding.
3. The prolactin level reaches its peak after _____ min. of breastfeeding.
4. The prolactin reflex may continue even if the baby is not _____.
5. The contraction of the milk secreting cells caused by the hormone oxytocin is called _____.

II. BENEFICIAL PROPERTIES OF BREAST MILK

Breast milk has been termed the ideal food for infants because of nutrients it contains in correct proportions. It also contains certain anti-infective properties which protect the infant against disease. These nutrition and anti-infective components of breast milk are given.

A. Nutritional Components

1. **Protein Content.** The proteins of milk are casein and whey. As compared to cows milk, human "milk" contains less total proteins but more of the whey variety. Whey proteins are acidified in the stomach, resulting in fine, flocculent curds which are easily digestible than the casein-predominant proteins found in cows' milk. (6)
2. **Carbohydrates Content.** The carbohydrates content of breast milk consists mostly of lactose and is of a higher concentration than cow's milk. Lactose has been shown (1) to
 - a. enhance calcium absorption
 - b. metabolize rapidly to galactose and glucose which supply energy to the growing brain of the infant
 - c. promote the development of lactobacillus bifidus which interferes with the growth of pathogenic organisms of the intestinal tract, thus providing protection from infection.
3. **Iron Content.** Studies on iron insufficiency in breastfed infants show that the infant's intake of iron from breast milk is adequate for the first 4-6 months of life if the mother's diet is adequate. This is so even though breast milk contains only amounts of iron due to the following reasons: (6)
 - a. the full-time infant has adequate iron stores which decrease in quantity only on the 4th to 6th month after birth
 - b. the high lactose and vitamin C levels on human milk facilitate absorption of iron.
4. **Vitamins.** As a rule, the diet of a nursing mother influences the levels of vitamins in her milk. The breast milk of a woman on a balanced diet provides all of the vitamins necessary for the infant's nutrition in the first 4-6

months of life. An added advantage of breast milk is that no vitamins are lost in collecting, processing, reconstituting and reheating that may take place when formula feeding is employed. (6)

5. **Fats.** The main constituents of milk fat are called triglycerides. These are easily broken down to glycerol and fatty acids by the enzyme lipase which is found in breast milk itself as well as in the infant's intestine. The triglycerides in human milk are generally more digestible and absorbable than that of cow's milk.
6. **Mineral Content.** Breast milk contains low levels of calcium, phosphorous, sodium and potassium as compared to cow's milk. This, plus the low protein content of human milk makes the solute load on the kidney of the breast-fed infant lighter than that of the formula-fed one. In addition, the additive water required for excretion of the excess salts (sodium, etc.), which may result in salt overload and consequent dehydration in formula-fed, is avoided. (6)

B. Anti-infective Components

Breast milk contains several components which are responsible for protecting infants against many infections. Most of these components are abundant in the first milk produced by the breast called colostrum. Colostrum is yellowish in color and is secreted by the breast within 3 days after the child's birth. From the 4th to the 10th day, the colostrum can appear in the form of bluish white milk.

Among the more common anti-infective components of breast milk are:

1. **Cellular components.** The large leucocytes in breast milk destroy harmful bacteria by their phagocytic action.
2. **Immunoglobulins.** These are antibodies that protect against gastrointestinal and respiratory infections. The most significant of the immunoglobulins is the

secretory IgA which is high in colostrum in the first few days after delivery. Since the infant's own secretory IgA is inadequate during this period, that received from the mother protects the gastro-intestinal mucosa against entry of pathogenic bacteria and enteroviruses.

3. Lysozyme. This is an enzyme that destroys bacterial cell wall and therefore provides protection against several micro organisms. Lysozyme activity is said to increase during lactation. (6)
4. Lactoferrin. This is an iron-binding protein which is abundant in breast milk but absent in cow's milk. Since iron may disrupt the protective effects of this protein, this should be taken into consideration in the giving of iron-supplements to healthy babies.
5. Lactobacillus bifidus. This is a factor that interfere with the growth and multiplication of pathogenic but not beneficial bacteria in the intestine of infants.

C. Anti-Allergic Properties (6)

While there are components present in breast milk that are beneficial to infants, the absence of certain components, specifically proteins which acts as allergens, also has its beneficial effects on infants. At birth, the infant's IgE system is defective which accounts for his being called the pre-allergic infant. Activation of this system by allergens gives risk to allergy problems in infants. Postponement in the introduction of foreign proteins in infants until the 6th month enables the full functioning of the infant's IgE system and this minimizes or entirely prevents allergic response.

III. BENEFITS OF BREASTFEEDING

The benefits of breastfeeding cannot be overemphasized. Its benefits can be categorized into two: a) its benefits to the infant, and b) its benefits to the mother.

A. Benefits to the Infant

1. It contains the essential nutrients needed for adequate growth. Breast milk has an optimal distribution of protein, fats and carbohydrates.

These nutrients are all that are needed by the child during his first 4 to 6 months of existence, thus making human milk perfect and complete. There is therefore no need of supplementary feeding the first 4 to 6 months.

2. Its components account for its easily digestible anti-infective and anti allergic properties. The preceding section has explained adequately, this particular advantage of breast milk over cow's and other milk.
3. It is fresh and clean. A mother who feeds her baby on infant formula has to be extra careful regarding milk preparation. She must see to it that the milk is fresh, not spoiled, and that it is clean or free from germs. Sterilization of bottles is needed to insure proper sanitation. Without such precautions, the child will tend to drink what is spoiled or unclean. The opposite is true with breast milk for it is always clean and will never be spoiled in the breast.
4. It promotes mother-child bonding. Breastfeeding encourages close reciprocal relationship between the mother and the child which contributes to the emotional stability of the child as he grows up. Breastfeeding gives a sense of fulfillment to the mother and a feeling of security to the child.
5. It promotes oral health. Breastfeeding has an effect on the teeth and the jaw formation due to the exercise of a baby nursing at the mother's breast.

B. Benefits to the Mother

Breast feeding is not only beneficial to the infant but also to the mother. Here are some

of the major benefits which mothers can get as a result of breastfeeding.

1. It is a simple and convenient way of feeding the child. Breastfeeding is always available wherever and whenever the child desires.
2. It is economical. The cost of commercial milk is high. Many mothers cannot afford to buy the infant formulas regularly. In contrast to the high cost of infant formula, breast milk is free. Breastfeeding mothers do not need to buy formulas or to sterilize bottles and heat milk for each feeding.
3. It prevents post-delivery hemorrhage. The baby's sucking stimulates the uterus to contract and prevent post-delivery bleeding. The uterus also returns more quickly to its normal size. Helping the mother regain her figure quickly is an added advantage.
4. It helps promote birth spacing. During the first 4 to 6 months, mothers who completely breastfeed usually have longer periods of infertility. Vigorous, frequent sucking by the child stimulates the release of prolactin which induces milk flow and is also believed to suppress the onset of menstruation in nursing mothers.

REVIEW QUESTIONS II

DIRECTIONS: Supply the missing word(s) to make the sentence complete.

- 1-2. Breast milk contains less total proteins but more of the variety which produce fine flocculent curds, making the milk more
- 3-4. The carbohydrates content of breast milk consists mostly of , which enhances absorption.
- 5-6. The infant's intake of iron from breast milk is adequate for the first months of life if the mother's is adequate.
- 7-8. The main constituents of milk fat are called They are broken down and made more absorbable by the enzyme
- 9-10. Breast milk contains low levels of and proteins, which together the water requirements of the kidney.
- 11-12. Most of the nutritional components are abundant in the first milk produced by the breasts which is called This first milk has components like immunoglobulins and lacto bacillus bifidus.
- 13-14. Activation of the system by gives rise to allergic problems in infants. This is the reason why introduction of to infants is postponed until the 6th month when his IgE system is fully functioning.
15. Breastfeeding contributes to the emotional stability of the infant when he grows up because of the that is promoted.
16. Breastfeeding promotes oral health due to the of the infant's teeth and jaws while sucking.
- 17-18. The infant's sucking stimulates the uterus to , thus preventing post delivery
- 19-20. Mothers who completely breastfeed usually have periods of infertility. This promotes of children.

ANSWERS TO REVIEW QUESTIONS

I. A.

1. milk pool
2. nipple
3. milk duct
4. milk sac or alveoli
5. ductule

B. Mechanism

1. Let down reflex

1. Sucking stimulus
2. stimulus carried to posterior pituitary
3. oxytocin produced
4. goes to breast via bloodstream causing myoepithelial cells to contract
5. milk in alveoli squeezed and comes out thru milk ducts and pools to baby's mouth

2. Prolactin reflex

1. sucking stimulus
2. stimulus carried to anterior pituitary
3. secretes prolactin
4. prolactin gives signals to breast
5. releases of milk from alveoli

C. 1. duration

2. frequency
3. 30 minutes

4. sucking

5. let down reflex

(in any order)

II. 1. whey

2. digestible

3. lactose

4. calcium

5. 4 — 6

6. diet

7. triglycerides

8. lipase

9. salts (or calcium, phosphorous, sodium or potassium)

10. lightens or reduces

11. colostrum

12. anti-infective

13. allergens

14. foreign proteins

15. close relationship or bonding

16. exercise

17. contract

18. hemorrhage or bleeding

19. longer

20. spacing

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POST TEST

DIRECTIONS: Encircle the letter corresponding to the best answer.

1. The components of the breast as they appear in sequence are
 - a. milk sacs – ductules – milk pools – milk ducts
 - b. milk ducts – milk pools – milk sacs – ductules
 - c. milk pools – milk ducts – ductules – milk sacs
 - d. milk sacs – ductules – milk ducts – milk pools
2. The structure of the breast which is composed of milk-secreting cells is the
 - a. lactiferous sinus
 - b. lactiferous duct
 - c. alveolus
 - d. alveola
3. What is the function of the myoepithelial cells surrounding the alveoli?
 - a. serve as protective covering of the alveoli
 - b. act as the milk – secreting cells
 - c. serve as the storage place of milk in the alveoli
 - d. contract and squeeze milk out of alveoli
4. Which important function does the Tubercles of Montgomery have?
 - a. passage of milk from milk sacs to the milk ducts
 - b. lubricates and protects the nipples during nursing
 - c. hardens the nipples to protect it from the baby's sucking
 - d. passage of milk from the milk ducts to the baby's mouth
5. The best stimulus to milk production is the
 - a. massaging of the breast
 - b. baby's sucking
 - c. mother's balanced diet
 - d. mother's intake of milk-enhancing pills
6. What is the function of the hormone prolactin?
 - a. signals the breast to release the milk produced in the alveoli
 - b. stimulates the anterior pituitary gland to produce oxytocin
 - c. causes the myoepithelial cells and milk ducts to contract
 - d. increases the volume of milk produced in the breasts.
7. What is the function of the hormone oxytocin?
 - a. signals the breast to release the milk produced in the alveoli
 - b. stimulates the anterior pituitary gland to produce oxytocin
 - c. causes the myoepithelial cells and milk ducts to contract
 - d. increases the volume of milk produced in the breasts.
8. The milk produced by the prolactin reflex, as compared to the let-down reflex
 - a. 1 only
 - b. 4 only
 - c. 1 and 3
 - d. 2 and 4
 1. may continue even if the baby is not sucking
 2. stops when the baby stops sucking
 3. is lower in volume, calorie and fat content
 4. is higher in volume, calorie and fat content.
9. An understanding of the prolactin cycle will help the health worker in giving health teaching to the mother regarding
 - a. 1 and 2
 - b. 1 and 3
 - c. 1 and 3
 - d. 3 and 4
 1. what foods to eat
 2. how to breast feed
 3. when to breast feed
 4. how long to breast feed
10. The prolactin level reaches its peak after
 - a. 15 minutes
 - b. 30 minutes
 - c. 45 minutes
 - d. 60 minutes
11. The nutritional component of breast milk that is responsible for producing fine flocculent curds that are easily digestible is the
 - a. iron
 - b. lactose
 - c. whey protein
 - d. tryglycerides

12. The nutritional component of breast milk that has been shown to enhance calcium absorption is
- iron
 - lactose
 - whey protein
 - tryglycerides
13. The fat of milk that is broken down by the enzyme lipase making the milk absorbable is the
- iron
 - lactose
 - whey protein
 - tryglycerides
14. Two characteristics of breast milk that account for its low solute load on the kidney are its
- 1 and 2
 - 1 and 3
 - 2 and 3
 - 3 and 4
- low protein content
 - high lactose content
 - low mineral content
 - high vitamin content
15. The factor in breast milk that interferes with the growth and multiplication of pathogenic but not beneficial bacteria is the
- immunoglobulins
 - lysozyme
 - lactoferrin
 - lactobacillus bifidus
16. Which of the following components absent in breast milk is beneficial to the infant?
- erythrocytes
 - leucocytes
 - allergens
 - antihistamines
17. Breast milk is sure to be fresh and clean as compared to infant formulas, because the milk
- 1 only
 - 1 and 3
 - 2 only
 - 2 and 4
- does not get spoiled in the breast
 - can be pasteurized
 - does not need any container
 - container can be sterilized
18. Breast feeding promotes a close relationship between the mother and child which benefits
- the mother
 - the child
 - both mother and child
 - the parents
19. Breastfeeding, which stimulates the uterus to contract, indirectly benefits the mother by
- 1 and 2
 - 2 only
 - 2 and 3
 - 3 and 4
- promoting early urination
 - preventing post-delivery hemorrhage
 - helping the mother retain her figure quickly
 - stimulating intestinal peristalsis
20. Breastfeeding helps promote birth spacing by
- preventing ovulation
 - preventing conception
 - stimulating menstruation
 - prolonging the period of infertility

ANSWERS TO POST-TEST

- | | |
|-------|-------|
| 1. d | 11. c |
| 2. c | 12. b |
| 3. d | 13. d |
| 4. a | 14. b |
| 5. b | 15. d |
| 6. a | 16. c |
| 7. c | 17. b |
| 8. a | 18. c |
| 9. d | 19. c |
| 10. b | 20. d |

RECOMMENDED FOLLOW-UP

1. Study in greater detail the structure and function of the breast. The presentation in this module has been simplified to some extent to make it easier for health workers to give advice to mothers. However, a more thorough knowledge on the technical aspects of breastfeeding will be a benefit to the health workers.

Module 2

**Practice
of
Breastfeeding**

INTRODUCTION

Preparation for childbirth should include advice on breastfeeding. It is often overlooked because breastfeeding is thought to be natural and is prescribed to be practiced by most mothers, that it need not be taught. However, breastfeeding requires certain preparations and techniques that have to be learned in order to get the best results for both mother and baby. Mothers who are not properly informed may experience difficulties or tend to breastfeed for shorter periods.

Mothers in Metro Manila have beliefs which lead them to practice mixed feeding or even stop breastfeeding. Mothers who breastfeed for the first time observe that their first milk looks yellow and sticky, and conclude that it is spoiled. Other mothers discontinue breastfeeding because they notice that their infants have “wet” and “curdy” stools and believe it is due to their milk. There are also mothers who work outside of the home and believe that they cannot breastfeed at all.

In the cities of Cotabato, Davao and Zamboanga, there are traditional beliefs and practices on breastfeeding too. For example — a mothers should receive food with both hands so both of her breasts will produce milk; a mother should wear a rattan crown after delivery because rattan is a symbol of flowing milk; after a delivery a papaya fruit’s sap should be dropped on the mo-

ther’s breast in order to have adequate milk supply. Such practices show the desire and eagerness of some Filipino mothers to have adequate milk.

Although these practices are not harmful, it would be more helpful if mothers know of the proper preparations for breastfeeding and learn how to maintain milk supply.

Thus, after sharing information on the benefits derived from breastfeeding, mothers should be encouraged to take responsibility themselves for the decision on how to feed their infants. Once a mother has decided to breastfeed, it is necessary to inform her about the proper practice of breastfeeding. With the support of a health service provider, a well-informed mother will more likely breastfeed her child with success and enjoy the experience.

For this purpose, this module is divided into three (3) parts. These are:

1. Preparation for Breastfeeding — to prevent many of the problems encountered in breastfeeding.
2. Maintaining Milk Production — to ensure a continuous supply of milk.
3. Weaning and Supplementary Feeding — so that these will maximize rather than jeopardize the advantages that can be derived from breastfeeding.

OBJECTIVES

After reading this module the user should be able to:

1. Give the reasons for the physical, mental and emotional preparations needed for breastfeeding.
2. Identify appropriate measures in preparing the nipple and breast for breastfeeding.
3. Explain the various techniques of initiating and maintaining milk production.
4. Differentiate weaning from supplementary feeding.
5. Identify the principles involved in weaning and supplementary feeding.

RECOMMENDED PREPARATION

It is helpful for you to be familiar with the structure of the breast and the mechanism involved in milk production (refer to Module 1) and physiology of lactation. This will help you understand some of the measures involved in the preparation of the mother for breastfeeding as well as the initiation and maintenance of breastfeeding.

I. PREPARATION FOR BREASTFEEDING

As early as pregnancy, a mother should prepare for breastfeeding. This preparation include the physical, mental and emotional conditions of the mother. The physical preparation include adequate nutrition, preparation of the nipples and breast, avoidance of harmful drugs and adequate rest, sleep and exercise.

A. Nutrition During Pregnancy

Adequate nutrition is needed by a pregnant woman because it helps her body to produce an adequate amount of milk. It also builds up reserves for herself to allow her to breastfeed her baby without affecting her own needs and health. A poorly nourished woman will have to draw nutrients from her own body in order to produce milk.

However, a malnourished mother should not stop breastfeeding her baby. She can still successfully breastfeed and have a normal healthy baby. To stop breastfeeding will only lead to malnutrition for both mother and child.

A mother should have a balanced diet. If possible, a mother should include meat or fish, eggs, dried beans, green leafy vegetables, fruits and fruit juices. Shells (shellfish) such as clams, tahong, halaan and tulia; small fish like dilis; and green leafy vegetables (malunggay, kangkong, kalabasa tops, alugbati, squash, petsay and gabi) are less expensive and yet they are good sources of calcium and vitamins.

B. Preparation of the Breasts for Breastfeeding

Some mothers complain of soreness and cracks in their nipples while breastfeeding. This

is particularly true to women with fair skin and whose nipples are well protected from friction that they become tender when sucked. To prevent soreness and cracks and even bleeding, exercises to toughen the nipple about the last three months before delivery are recommended.

These exercises are given below with appropriate illustrations.

1. Support the breast with one hand and use the other hand for the exercise.

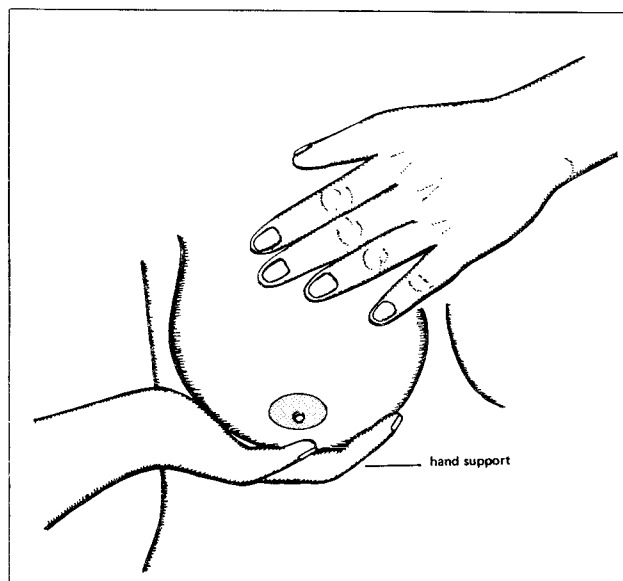


Fig. 1. Supporting the Breast

2. Gently pull the nipples in all directions to toughen them.
3. Rub them gently with a towel.
4. Roll the nipple gently. Grasp the nipple at its base with the thumb and forefinger and pull it out firmly — just enough so that you feel it but it does not hurt, then roll the nipple to a different location at the base of the nipple and repeat. This should be done twice a day in the last months of pregnancy, as when bathing.

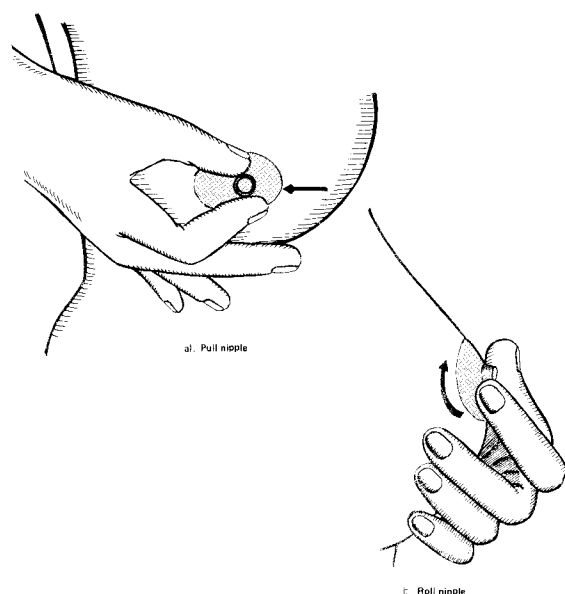


Fig. 2. Nipple Rolling

5. During the last month of pregnancy, stretch the nipples gently.

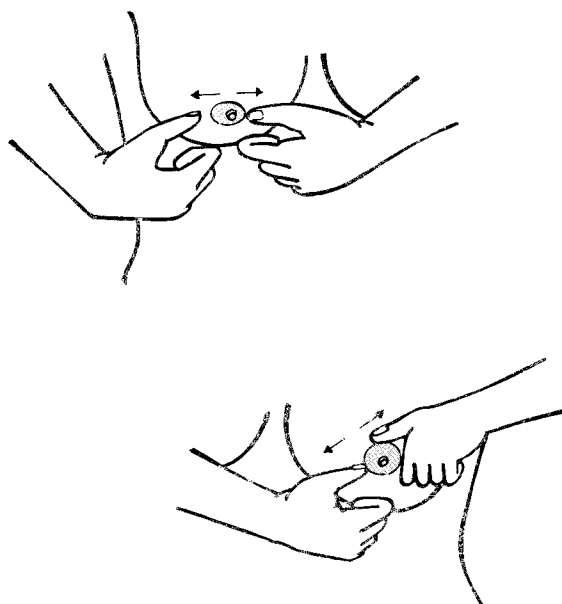


Fig. 3. Stretching Nipple

6. A lubricant such as baby oil, coconut milk or coconut oil may be used on the nipples, to lessen discomfort while doing the exercise. However, avoid placing them over the duct openings.

7. Expose the nipples to the air of wear loose clothing.
8. Avoid the use of soap or alcohol, which dry the nipples and predispose them to cracking.

C. Drugs During Childbirth

Some drugs may interfere with milk production causing problems in breastfeeding later or it may affect the baby. For example, oral contraceptives or birth control pills have been found to lower milk production. Thus, a mother should ask the advice of a doctor before taking any medication.

D. Adequate Rest and Sleep

A well-rested pregnant mother who keeps up exercises recommended by the doctor maintains her physical fitness. This will help ensure uncomplicated pregnancy and delivery. In addition, a rested mother in a relaxed position promotes the let-down reflex and consequently, the flow of milk.

E. Mental and Emotional Preparation for Breastfeeding

Aside from the physical preparation for breastfeeding, the pregnant mother has also to be mentally and emotionally prepared, in other words, be relaxed. Being relaxed also means being free from tension and worries even about breast-feeding. Psychological factors such as lack of confidence or motivation, anxiety and other forms of stress can interfere with the let-down reflex, resulting in problems in breastfeeding. A mother should therefore cultivate a strong desire to breastfeed.

It is recognized that an important requirement for successful breastfeeding is the mother's confidence that she can do it. Especially for the younger or inexperienced one, the mother's confidence is cultivated by the support she received from persons close to her and those she comes in contact with for consultations. Causes of the mother's anxieties and fears should be verified and remedied by adequate explanations. The support provided by the people surrounding the pregnant mother is important for successful breastfeeding.

REVIEW QUESTIONS I

- A. Match the measures to be taken/avoided in preparation for breastfeeding (Column II) with the rationale for the measure. Place the letter of the correct answer on the blanks provided.**

Column I

- 1. promotes the let down reflex
- 2. builds up reserves for the pregnant woman allowing her to breastfeed adequately
- 3. lowers milk production
- 4. prevents sore and cracked nipples
- 5. promotes physical fitness

Column II

- a. sleep and exercise
- b. toughening exercises
- c. confidence in breastfeeding
- d. taking of chloramphenicol
- e. adequate and proper food
- f. taking of oral contraceptives

- B. Give 5 exercises/measures to prepare the breasts for breastfeeding**

II. MAINTAINING MILK PRODUCTION

Mothers who were asked why they stopped breastfeeding often gave the reason that their breastmilk "dried up" or it was insufficient. At other times, these reasons were given by mothers as an excuse for not breastfeeding. However, it has also been found that insufficient milk is sometimes caused by inappropriate advice and faulty technique.

To be able to maintain the production of breastmilk, a mother should be taught how to start breastfeeding her baby and the proper technique in breastfeeding.

A. The Start of Breastfeeding

The flow of milk from the mother's breasts is initiated by the let-down reflex which is elicited by the baby's sucking (as explained in Module 1). In view of this, the following instructions are given to the mother.

1. Breastfeed as soon as possible after delivery. In normal delivery, breastfeeding should be started soon after the infant and mother are fully awake, or even as early as thirty minutes. If the baby is delivered by caesarean operation, breastfeeding may start 3-4 hours after delivery or after the effects of anaesthesia has subsided. If the mother is not sure about other drugs used during the operation, she should inquire from the doctor if she received any harmful drugs which may be passed on to the infant during breastfeeding.

2. Start breastfeeding even when there is no breastmilk. Even though a mother's breast may not feel full and no milk is seen, the first feed at the breast is important for the following reasons:

- a. This enables the baby to suckle the first milk or colostrum which is rich in antibodies;
- b. The sucking reflex of the new born baby is strongest in the first half hour following birth;
- c. The mother is more likely to breastfeed successfully because of the stimulus made

by the vigorous sucking on the breast;

- d. Early contact between mother and infant promotes bonding or closeness.

Thus, a mother should not delay breastfeeding her newborn baby. Some mothers may feel exhausted by their labor or at times the baby seems disinterested about breastfeeding that they feel like putting-off early breastfeeding. However, if the mother is made to realize the importance of early breastfeeding then feeding her baby will become her priority.

3. Arrange for rooming-in during hospital stay. If the baby is born in the hospital, the mother should ask for the baby to sleep in mother's bed or in a crib beside her. Rooming-in or keeping the newborn in the same room with the mother allows her to breastfeed as soon as she can.

It also gives an opportunity for the mother to have close contact with her child. This is not possible if the baby is kept in the nursery.

4. Supplements should not be given to the newborn. While waiting for the breastmilk to come, supplements such as water (with sugar or honey), ampalaya juice, tiki-tiki or milk formula should not be given to the newborn baby.

Any supplement will cause the baby to be less hungry and to suck less often. This incomplete and irregular emptying of the breasts will cause the breasts to produce less milk.

B. Maintenance of Breastfeeding

Regular emptying of the breast is needed to get the milk flowing and it stimulates the breasts to produce more milk. At the beginning, the baby may seem not to be very hungry and feeding may last for a few minutes. Slowly increase feeding time from 10 to 15 minutes initially up to the recommended 30 minutes every 2-1/2 – 3 hours apart to coincide with the prolactin cycle.

After 3 to 5 days, the breasts become full with milk and it will be easier for the mother to nurse the baby. The earlier the baby feeds, the sooner milk will come in. With regular feeding, the breasts also produce more milk. Demand feeding means nursing the baby whenever he is

hungry. Crying may not always be the best indicator that the baby is hungry — e.g. when a baby cries one hour after feeding, it may be necessary to ascertain the cause because the baby in all probabilities is not yet hungry at that time.

During the first few days babies may want to feed only 2, 3 or 4 times a day. However, from the third day onwards, the pattern changes and they may want to feed as much as 8 times in 24 hours.

As the baby gets older his feeding pattern will change. He may take in larger quantities of milk at each feeding and feed less often than in the earlier months.

C. Technique in Breastfeeding

Certain techniques may be employed to facilitate the baby's sucking and to promote and maintain breastfeeding with the comfort of both mother and baby in mind.

1. Start the rooting reflex. The mother starts the rooting reflex by placing her nipples on the baby's cheek so that the baby will turn its head towards the nipple.

Then, the mother allows the nipple to touch the infant's mouth so that the infant will open its mouth and try to find a nipple to suck. This is called the rooting reflex. (Figure 1)



Fig. 1. Rooting Reflex

2. Start the sucking reflex. The sucking reflex is started by the nipple touching the infant's palate deep in the mouth.

For the nipple to touch the palate far enough back, the nipple and much of the areola must be inside the baby's mouth. (Figure 2)

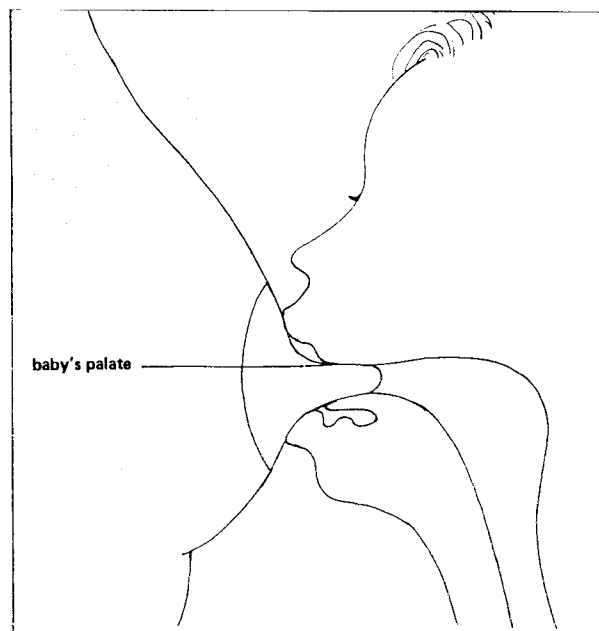


Fig. 2. Proper Position for Sucking Reflex

When the baby starts grasping the nipple, the areola must be held by the mother between the thumb and the index finger to help the baby get as much as the areola into his mouth.

3. Breastfeed in a comfortable position. Breastfeeding should be done in a position that is comfortable to both the mother and infant. This would help in getting the milk to flow.

This could be done with both the mother and infant lying down (Figure 3) or the mother sitting with the baby in her arms. When in a sitting position, a chair with arm rests will support the mother's arms while feeding. (Figure 4)



Fig. 3. Proper breastfeeding in a lying position.



Fig. 4. Proper breastfeeding in a sitting position.

4. Allow the breast to fall towards the baby. If the breast is pulling or falling away from the baby it becomes difficult for the baby to grasp the nipple. It also stretches the nipple and the extra suction on the nipple skin can cause soreness.

Thus, the mother should hold the baby close enough to her breast to keep the nipple and areola in place inside the mouth. This will enable adequate and comfortable sucking. (Figure 5)



Fig. 5. Allowing the breast to fall towards the baby.

5. Help the baby get as much milk as possible. To do this, the mother should hold the areola (the dark area surrounding the nipple) between her thumb and index finger. This will help the baby get as much milk as possible into his mouth. (Figure 6)

She should also make sure that the baby is not just sucking the nipple because this will be painful and may interfere with the flow of milk.



Fig. 6. Holding the areola between thumb and index finger (From Sr. A. Murdaugh & L.E. Miller, *Helping the breastfeeding mother*, *Am.J. Nurs.* 72:1420, 1972).

6. Use the finger to take the baby off the breast. If the baby is just sucking the nipple, his tongue, or his lower lip, take him off the breast, then resume breastfeeding.

This is done by placing a clean finger to press the breast away from the corner of the baby's mouth. (Figure 7)



Fig. 7. Taking the baby off the breast (Reference: *Nursing Mother's Association of the Phils., Breastfeeding: A Guide for Nurturing Your Baby*, Manila, 1983. p. 33.

Another way is by gently pulling back on his cheek near the corner of his mouth. This breaks the suction that holds the nipple in the baby's mouth. (Figure 8)



Fig. 8. Pulling back on baby's cheek near corner of his mouth (from Sr. A. Murdaugh and L.E. Miller, *Helping the breastfeeding mother*, *Am.J. Nurs.* 72:1420, 1972).

7. Do not let the breast cover the baby's nose. If the part of the breast falls over the baby's nostril, the mother can gently press this part of the breast out of the way with the finger of her free hand. This allows the baby to breathe easily. (Figure 9)



Fig. 9. Pressing the breast out of baby's nose (Reference: Eiger, M. S. and Olds, S.W. *The Complete Book of Breastfeeding*, N.Y.: Workman Publishing Co., Inc. 1972, p. 86)

8. Offer both breasts at each feeding. When feeding, both breasts should be sucked:



feeding on left



Feeding on right

Fig. 10. Giving breast alternately on the left and the right.

One breast may be given for 5 to 15 minutes, followed by the other breast for approximately the same length of time.

If only one breast is given at each feed, the other breast becomes overfilled. This will inhibit increased milk production. Sore nipples are also less common when both breasts are given at each feed.

However, if the baby is satisfied after feeding from one breast, milk from the other breast may be expressed and feeding should be started on that breast at the next feeding. (Expressing milk is described on page 27 of this Manual).

9. Give breasts alternately. (Figure 10) Offer first the breast that the baby last sucked during the previous feeding.

If the baby first fed on the right breast and stopped feeding with the left, the left breast should be offered first in the next feeding, then the right during the same feeding time and so on.

This alternate use of both breasts at each feeding will ensure adequate emptying of the breasts which is an important factor in the stimulation of milk flow.

10. Regularly and completely empty the breasts. To increase milk flow and maintain adequate breast milk supply, there should be regular and complete emptying of the breast by a vigorous infant.

This includes feeding the baby frequently at night to prevent concentration of milk in mother's breast.

11. Mother should rest and be relaxed. Having enough sleep, rest and relaxation (from worries or tension) will greatly help milk production. Since a part of the brain activates the release of hormones necessary for milk production, the mental condition of the mother should be relaxed in order to allow the let-down reflex.

12. Observe proper personal cleanliness. A daily bath and change into clean clothing are necessary. (Figure 11)

However, using soap or alcohol on the nipples should be avoided. This may remove the skin's natural oils and lead to cracking of the skin, sore nipples and infection.



Fig. 11. Avoiding soap or Alcohol

REVIEW QUESTIONS II

Directions: Circle the letter T if the statement is true and F if the statement is false.

- | | | | |
|---|---|-----|--|
| T | F | 1. | In a normal delivery, the mother should breastfeed her child after she has slept for 3 to 4 hours. |
| T | F | 2. | A mother should start breastfeeding after delivery even when there is no breastmilk. |
| T | F | 3. | The sucking reflex of the newborn baby is weak in the first half hour following birth. |
| T | F | 4. | Placing the newborn baby in the nursery benefits the infant just as well as rooming-in. |
| T | F | 5. | Supplements such as water or milk formula should be given to the newborn baby if the mother's breastmilk has not yet come. |
| T | F | 6. | The baby should be breastfed regularly in order to stimulate the let-down reflex. |
| T | F | 7. | The mother can teach the baby how to suck by starting the rooting reflex. |
| T | F | 8. | The rooting reflex is done by means of touching both cheeks of the baby. |
| T | F | 9. | The sucking reflex is started when the nipple touches the infant's palate deep in the mouth. |
| T | F | 10. | In breastfeeding, only the nipple should be placed in the infant's mouth. |
| T | F | 11. | Gently pressing the breast away from the corner of the baby's mouth helps break the baby's feeding. |
| T | F | 12. | Both breasts should be given at each feeding to prevent overfilling. |
| T | F | 13. | Breasts should be given alternately in order to ensure equal stimulation of milk flow. |
| T | F | 14. | A daily bath and change of clothing is a too rigid pattern for the mother to follow. |
| T | F | 15. | Breastfeeding should be done regularly except during the night time. |

III. WEANING AND SUPPLEMENTARY FEEDING

Weaning is the process of withdrawal of breast-milk, making the infant accustomed to not feeding from the breast. It is the period when a mother decides to stop breastfeeding. On the other hand, supplementary feeding means giving food to the baby in addition to breastmilk in order to increase or supplement nutrient intake in infancy.

In the Philippines, low income and food beliefs influence mothers to limit the diets of their infant during the first year. For instance, there is a common belief especially in the rural areas that giving fish to babies can cause worms and so fish is often withheld even beyond one year of the child's age. When the real causes of worm infestation are unhygienic preparation of food, use of dirty utensils and unsanitary manner of feeding.

However, older infants need supplementary food not because there is something wrong with breastmilk, or because the amount of milk produced by the breast has decreased. It should be noted that some mothers even breastfeed their children for more than a year.

Supplementary food is given because breast-milk as the only source of food can no longer cope with the increasing calorie or nutritional needs of a growing child. Breastfeeding alone becomes inadequate after the 4th to 6th month. Supplementary food is also needed to develop good food habits and a liking for a variety of foods. These are traits which are likely to be carried on to adulthood. If supplementary food is given too early the baby risks contacting diarrhea and allergies due to unhygienic preparation and if it is started too late, the child risks being malnourished.

Therefore, nurses, midwives and community-based health workers should advise mothers on how to introduce supplementary food to their babies and to wean their children.

A. Weaning

The following are generally accepted principles related to weaning:

1. There is no general rule as to how long breastfeeding should last. Breastfeeding lasts as long as the baby wants to nurse on the breast and as long as milk is produced. Thus, breastfeeding may be continued for 1 to 2 years so long as it is not inconvenient for the mother, it meets the physiological and psychological needs of the child, and good quality supplementary foods are available.

2. Facilitate weaning by gradually decreasing breastfeeding. The mother should reduce the frequency of breastfeeding gradually until the child weans himself completely, at his own pace. Babies may choose to wean at 9, 12, 18 or 24 months, or perhaps even later.

B Introduction of Supplementary Food

The following are suggested guidelines for supplementary feeding:

1. Give supplementary food during the 4th to 6th month but continue breastfeeding. Starting supplements by six months covers the needs of most infants. The early introduction of solids will make the baby less hungry. If the baby sucks less often and less vigorously, it will diminish the mother's milk supply. So, even while supplementary foods are being given, breastfeeding should be continued for as long as the mother is able.

2. Check whether the baby is gaining weight. Weight gain is an indicator of the baby's general health. To check whether a baby is gaining weight, it is necessary to first make sure that the (a) the baby is fed at correct intervals; (b) the baby is positioned properly and sucking correctly and (c) the mother is not over anxious, is eating well and getting adequate rest and fluids. If all of these are being done but the baby is still not gaining well, it may be necessary to supplement with finely-prepared pure nutritious foods.

3. Give very small amounts of any new food. At the beginning, teaspoons or even less should be given in order to detect whether the baby is ready for the particular food. Refusing to eat is a sign that the baby is not yet ready. The baby should not be forced to eat more of a food that he takes willingly.

4. Start with mashed foods of a very thin and smooth consistency. This should be done at 4 to 6 months to promote the digestion of food. Liquids such as milk or vegetable water may be added later, until gradually the consistency is thickened as the infant learns how to use his tongue in propelling the food back. When the baby is able to chew, gradually substitute finely chopped for mashed foods usually at 8 months.

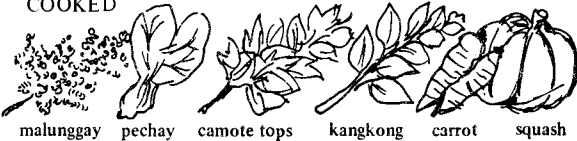
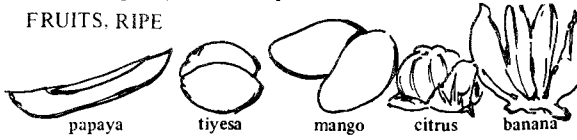




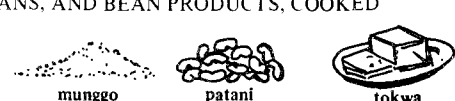



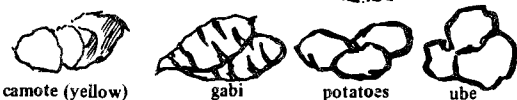



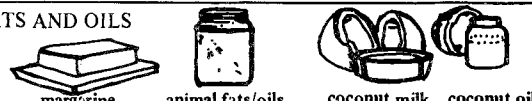



5. Provide variety in choice of food. As the baby grows older, he should get accustomed to eating a variety of foods since no one food can provide all the nutrients that a baby needs.

The baby like older persons, may also tire of repetition or the same food in the diet.

6. Substitute food disliked by baby. If, after several trials, it is apparent that a baby has an acute dislike for a food, omit that item for a week or two and then try it again. If the dislike persists substitute it with another food of similar nutritive value from the same food group.

7. Gradually introduce supplementary food one at a time. This is done in order to allow the infant's gastro-intestinal tract to tolerate and digest food. It also allows the detection of intolerance (such as allergy) for a particular food.

Chart 1 shows the suggested supplementary foods for specific age group. These are grouped into (a) body building foods, (b) regulating foods and (c) energy giving foods. The chart also shows the recommended amount of supplementary food to be given.

FOOD	Daily recommended amounts		
	4-6 months	7-11 months	1-3 years
DARK GREEN LEAFY AND YELLOW VEGETABLES, COOKED  malunggay pechay camote tops kangkong carrot squash FRUITS, RIPE  papaya tiyesa mango citrus banana	 2 tablespoons pureed	 1/4 cup mashed	 1/3 cup chopped
FISH/MEAT/POULTRY, COOKED  EGG, COOKED DRIED BEANS, AND BEAN PRODUCTS, COOKED  munggo patani tokwa	 1 tablespoon flaked/ground 1/2 yolk	 2 tablespoons flaked/ground 1/2 piece	 4 tablespoons sliced to pieces 1 piece
RICE (lugaw for 4-6 months), cooked ROOTCROPS, COOKED  camote (yellow) gabi potatoes ube	 1/2 cup	 1 cup	 2 cups
FATS AND OILS  margarine animal fats/oils coconut milk coconut oil	 1 teaspoon	 2 teaspoons	 5 teaspoons

If you have stopped breastfeeding your child, give him 2 cups of milk, if he is less than one year old; if he is more than one year old, give him 1 cup of milk in addition to the foods mentioned above.

* Source: Vitamin A Deficiency Anemia and Goiter (VADAG) Control Handbook. Edited by Florentino S. Solon. Makati: Nutrition Center of the Philippines. Second Edition, 1985, p. 28.

REVIEW QUESTIONS III

Directions: Supply the missing word(s) to complete the sentence.

- 1— 2. Weaning means breast-feeding while supplementary feeding means giving in addition to breastmilk.
- 3— 4. Breastmilk as the only source of food is generally recommended until months. However, as a general rule, breastfeeding may last as long as.....
5. Supplementary food may be given to the baby as early as months.
6. An indicator of the need for supplementary feeding is the baby's
7. Giving very small amounts of new food is recommended to detect whether the baby is for the particular food.
- 8— 9. A way of promoting the digestion of food is to start with food of a consistency.
10. Providing in the choice of food helps the baby get all the nutrients he needs.
- 11—12. Food that is disliked by the baby may be for a week or two and again.
13. If the dislike persists, a food with the same may be substituted.
- 14—15. Introducing supplemental food one at a time may be done for two reasons: to allow the infant to the food and to detect any for a particular food.

ANSWERS TO REVIEW QUESTIONS

- I. A 1. c
 2. e
 3. f
 4. b
 5. a
- B 1. Pulling the nipple in all directions.
 2. Rubbing the nipple gently with a towel.
 3. Rolling the nipple.
 4. Stretching the nipple.
 5. Exposing the nipples to the air.
- II. 1. F
 2. T
 3. F
 4. F
 5. F
 6. T
 7. T
 8. F
 9. T
 10. F
 11. T
 12. T
 13. T
 14. F
 15. F
- III. 1. stopping
 2. food
 3. 9
 4. the baby wants or there is milk in the breasts
 5. 4
 6. weight gain
 7. ready
 8. strained
 9. fine or thin or smooth consistency
 10. variety
 11. omitted
 12. tried
 13. nutritive value
 14. digest or tolerate
 15. intolerance or allergy

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3. "Breastfeeding: A Guide for Nurturing Your Baby". Nursing Mothers' Association of the Philippines, Kalinga ng mga Ina. Undated.
4. "A Manual on Infant Nutrition with Economics on Breastfeeding for Philippine Medical Colleges" Nutrition Center of the Philippines in cooperation with the Association of Philippine Medical Colleges.
5. Brochures/Pamphlets on
 - a. Breastfeeding: Loving and Nurturing Your Baby
 - b. Primary Health Care: Household Teaching Manual
 - c. Mga Tanong at Sagot Ukol sa Nutrisyon at Pagplano ng Pamilya
 - d. Mga Tanong At Sagot Tungkol sa Pagplano (Gabay para sa mga Tagapayo)
 - e. Maternal and Child Health primer
 - f. Women and Breastfeeding — WHO
 - g. Gatas para kay Neneng: Science Education Arts, UP

POST TEST

Directions: Encircle the letter T if the statement is true and F if the statement is false.

- T F 1. A poorly nourished mother is able to breastfeed her baby without affecting her own nutritional needs.
- T F 2. Exercises to toughen the nipple are recommended to prevent soreness and cracks.
- T F 3. Oral contraceptives have been found to lower milk production.
- T F 4. The let-down reflex is initiated by the baby's sucking regardless of the mother's emotional state.

Directions: (Encircle the letter corresponding to the best answer.

5. Which of the following measures are recommended to toughen the nipples?
1. pulling the nipples in one direction
 2. rolling the nipples
 3. stretching the nipples
 4. drying the nipples with alcohol
 5. drying the nipples with soap and water.
- a. 1 and 2
b. 2 and 3
c. 3 and 4
d. 4 and 5
6. Breastfeeding should be started soon after the infant and mother are fully awake
1. in a normal delivery.
 2. even after a caesarean section.
 3. only when there is milk in the mother's breasts.
 4. even when there is no milk in the mother's breasts.
- a. 1 and 3
b. 1 and 4
c. 1, 2 and 3
d. 1, 2 and 4
7. Early breastfeeding is recommended for the following reasons:
1. Colostrum or the first milk is richer in nutrients than the later milk produced by the breasts.
 2. To improve the baby's sucking reflex which is poor in the first

half hour following birth.

3. The mother is more likely to breastfeed successfully because of the vigorous sucking of the infant.
4. Early contact between mother and infant promotes a closer relationship among them.
- a. 1 and 2
b. 2 and 3
c. 1 and 3
d. 3 and 4

What should be done to the baby after delivery?

- a. Allow the baby to sleep with the mother or on a crib beside her.
- b. Place the baby in a far but visible place from the mother's place.
- c. Place the baby in the nursery until the breastmilk of the mother is fully established.
- d. Place the baby in the nursery until the mother is ready to go home.

Techniques that the mother can employ in breastfeeding to facilitate the baby's sucking include

1. Starting the rooting reflex by placing her nipple on the baby's cheek.
 2. Initiating the sucking reflex by trying to open the baby's mouth.
 3. Allowing the breast to fall towards the baby.
 4. Letting the baby play with the nipple.
- a. 1 and 2
b. 1 and 3
c. 2 and 3
d. 3 and 4

Techniques in breastfeeding that will maximize the baby and mother's comfort include

1. Resting the mother's arm on an armchair while breastfeeding in a sitting position.
2. Taking the baby off the breast by gently pulling back on his cheek near the corner of his mouth.
3. Offering only one breast during each feeding.
4. Feeding for less than 20 minutes but more frequently.

- a. 1 and 2
 - b. 1 and 3
 - c. 2 and 3
 - d. 3 and 4
11. As a general rule, breastfeeding may last
- a. until 9 months.
 - b. as long as the baby wants and milk is produced.
 - c. when good quality supplementary foods are available.
 - d. until 1 year.
12. Supplementary feeding means giving food to the baby
- a. without any breastmilk.
 - b. and gradual withdrawal of breastmilk.
 - c. in addition to breastmilk.
 - d. and irregular breastfeeding.
13. Eggwhite may cause allergy in the infant and thus, should not be given with the yolk until the baby is about
- a. 4 months
 - b. 6 months
 - c. 9 months
 - d. 11 months
14. Ideally, supplementary food should be given to the infant at
- a. 2 – 3 months
 - b. 3 – 4 months
 - c. 4 – 6 months
 - d. 7 – 8 months
15. To detect whatever the baby is ready for a particular food the mother should give
- a. different kinds of food to the baby in one feeding.
 - b. a large amount of food one kind at a time.
 - c. supplementary foods not earlier than 5 months.
 - d. very small amounts of any new food.
16. Weaning is the process of
- a. completely stopping breastfeeding
 - b. gradually withdrawing breastmilk.
 - c. applying bitter herbs or food (such as ampalaya) on the breast.
 - d. giving food to the baby.
17. Variety of foods is recommended in supplementary feeding in order to
- a. provide adequate nutrients for the baby.
 - b. facilitate the digestion of food.
 - c. prevent diarrhea and malnutrition.
 - d. prepare the digestive system for solid foods.
18. If a 4-month old baby is not gaining weight, it may be a cue that
- a. the mother's milk is not suitable for the baby.
 - b. the baby is not positioned properly and sucking well.
 - c. supplementary feeding may need to be started.
 - d. it is time for the mother to stop breastfeeding.
19. To facilitate the digestion of food among young infants
- a. give very small amounts of any new food.
 - b. give soup or rice porridge (lugao) only.
 - c. use strained foods of a very thin and smooth consistency.
 - d. gradually introduce solid food one at a time
20. If the baby dislikes a certain food, which initial step should the mother take?
- a. mix it with a food that he likes.
 - b. omit the item for a week or two and try it again.
 - c. omit the item from his diet and not give it anymore.
 - d. substitute it with another food of similar nutritive value.

ANSWER TO POST-TEST

- | | |
|-------|-------|
| 1. F | 11. b |
| 2. T | 12. c |
| 3. T | 13. d |
| 4. F | 14. c |
| 5. b | 15. d |
| 6. b | 16. a |
| 7. d | 17. a |
| 8. a | 18. c |
| 9. b | 19. c |
| 10. a | 20. b |

RECOMMENDED FOLLOW-UP

- A. Study the Supplementary Food Chart on page and plan a menu for the following:
 - 1. a four month old baby
 - 2. a six-month old baby
 - 3. a 10-month old baby
- B. Read any of the following modules according to your needs
 - 1. Module 3 — Breastfeeding according to the Working Mother
 - 2. Module 4 — Common Problems of Breastfeeding
 - 3. Module 5

Module 3

Breastfeeding and the Working Mother

INTRODUCTION

Today, more and more women are trying to get employed outside of the home because they want to practice their profession or earn additional income for the family. For these reasons, mothers decide to use artificial milk even when they are aware of the benefits derived by the infant from breastfeeding. In Metro Manila, some mothers even consider bottlefeeding to be as good as breastfeeding.

In the cities of Cotabato, Davao and Zamboanga, an interview of 277 mothers showed that the common reasons mentioned by mothers for not having breastfeed were: “inadequate milk and no milk supply” and “working outside the home.”

However, in the group discussion on breastfeeding among these mothers and some trained nurses, it was revealed that these mothers never knew about the possibility of continuing breastfeeding while working outside of the home. These are: giving stored expressed milk to the baby, bringing the baby to the place of work, or finding another lactating woman to breastfeed the baby, which is termed “wet nursing.”

This module will focus on the first option while dealing briefly on the other two options. The following will be discussed with selected illustrations: proper techniques of expressing milk; storing expressed milk; and tips to help the working mother.

OBJECTIVES

After reading this module, the user should be able to:

1. Apply the principles involved in expressing and storing breastmilk.
2. Identify suggested guidelines in maintaining breastfeeding while at work.
3. Explain options other than expressing and storing milk open to the working mother.

RECOMMENDED PREPARATION

It is important that the user should be familiar with the structure of the breast and the mechanism for breastfeeding. This will help the user understand the mechanics for manual expression of breastmilk.

I. PROPER TECHNIQUES OF EXPRESSING MILK.

Expressed milk means collected and stored human milk. It could be collected by manual extraction or by using a breast pump. Both methods are illustrated here.

A. Manual Expression of Breast Milk

Manual expression provides several advantages over the mechanical means. It is more comfortable, convenient, and stimulating due to the skin contact as contrasted to a plastic shield.

The steps in manual expression of breastmilk are given.

1. Position thumb and first two fingers behind the nipple. After washing the hands thoroughly with soap and water, position the thumb and first two fingers about 1 to 1-1/2 inches behind the nipple. (Fig. 1) This approximates the location of the milk pores behind the areola.

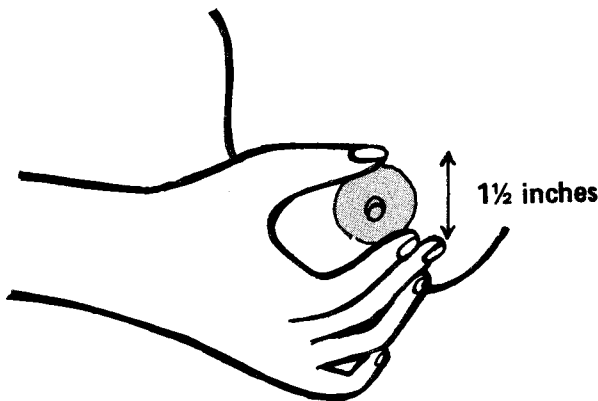


Fig. 1. Positioning the thumb and first two fingers behind the nipples.

This measurement which is not necessarily the outer edge of the areola, should be used as a guide. Since the areola varies in size from one woman to another.

2. Push backward towards the chest wall. Press forefinger and thumb together well behind nipple and areola. For a large breast, first lift then push into the chest wall.

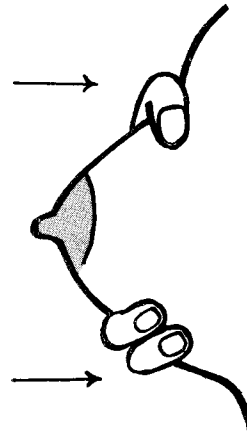


Fig. 2. Pushing backward towards the chest wall.

Reference for Figure 1 and 2: Nursing Mother's Association of the Philippines
Breastfeeding: A Guide for Nurturing Your Baby, p. 25

3. Roll thumb and fingers forward. Move hands gradually and gently forward in a stroking motion.

The rolling motion of the thumb and fingers compresses and empties the milk pools without hurting sensitive breast tissue.

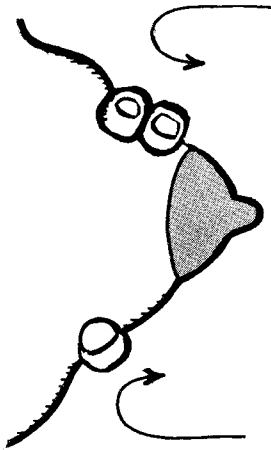


Fig. 3. Rolling thumb and fingers forward.

4. Repeat motions rhythmically. To drain the milk pools, position the fingers then push and roll, position, push, roll . . .

5. Change the thumb and finger positions. This is recommended to cover all areas where the milk pools are located.

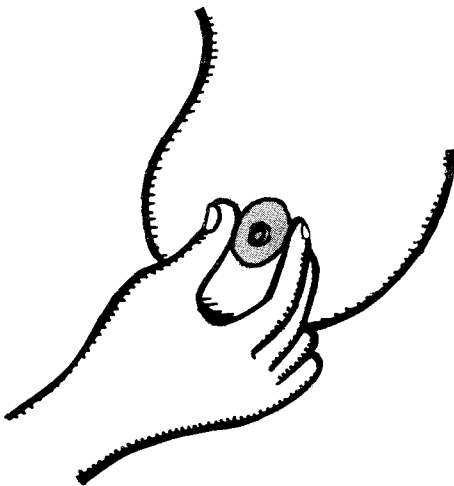


Fig. 4. Changing the thumb and finger position.

In manual expression of the milk, the following motions should be avoided:

1. Cupping the breast. This should be

avoided because it might press the milk ducts underneath the breast. In doing so, milk flow is prevented.

One or both hands may be placed around the base of the breast for support.

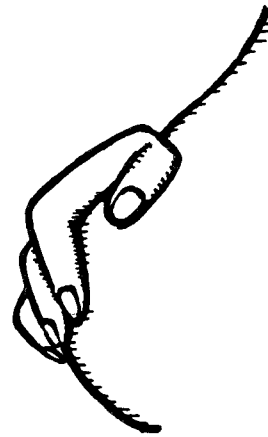


Fig. 5. Avoid cupping breast.

2. Spreading the fingers apart. This position would facilitate pressing the pools underneath the areola. It will not therefore stimulate the breast to produce milk.
3. Squeezing, pulling or sliding. These motions should be avoided since they can cause bruising, tissue damage, skin burns, respectively.

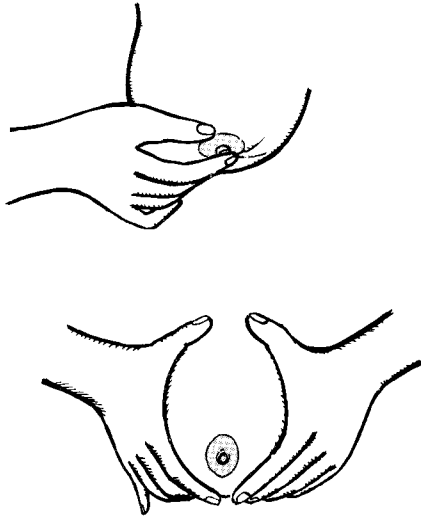


Fig. 6. Avoid Squeezing or sliding on breast (Ref. for Fig. 3-6, Nursing Mother's Association of the Phil.; Breastfeeding: A Guide for Nurturing Your Baby, Manila, 1983, pp. 25-27.)

B. Expressing Milk Using a Breast Pump

A breast pump is a device used to express milk from the mother's breast by means of suction. The most commonly available type in the Philippines has a suction-creating rubber bulb with a glass or plastic collecting container called horn. (See Figure 7)

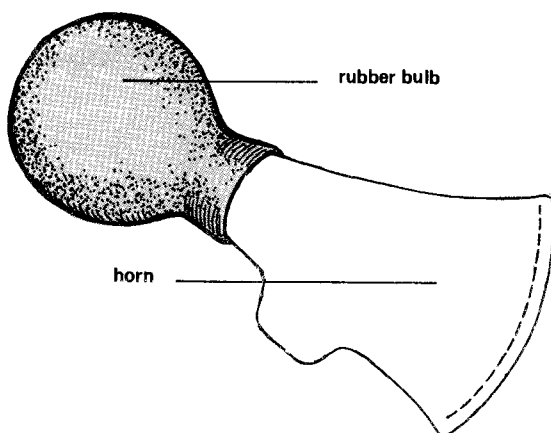
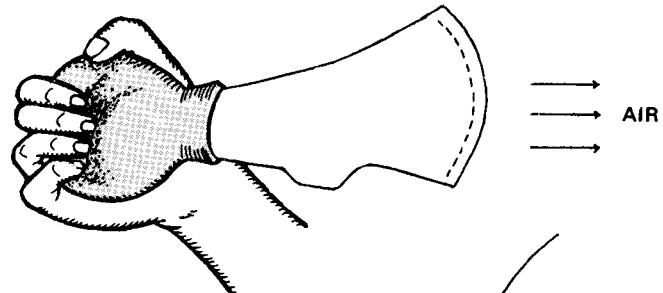


Fig. 7. Parts of a breast Pump.

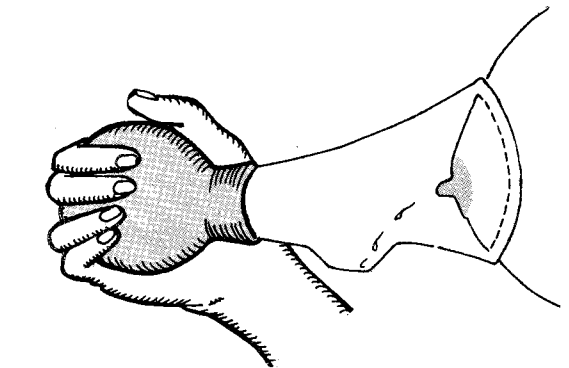
The rubber ball should be scrubbed thoroughly with soap and water while the horn be sterilized by boiling before starting the procedure of milk expression.

The steps in milk expression using a breast pump is shown in Figure 8.

1. Pump the bulb.



2. Insert the horn well over the areola.



3. Slowly release the bulb.

Fig. 8. Expressing Milk with a Breast Pump.

C. Storing Expressed Milk

Breastmilk that has been expressed from the breasts either manually or by means of a breast pump can be collected in a sterile container and

used immediately or stored for future use. The following guidelines can be observed.

1. Collect breastmilk in a sterilized container. Breastmilk may be stored in clean glass or plastic containers that have been sterilized by boiling for 20 minutes.

2. Use expressed milk store at a room temperature within 6 hours. Discard the milk after 6 hours.

3. Store breastmilk to be used later in a refrigerator or cooler. Collected breastmilk in sterilized containers last up to 24 hours when stored in the refrigerator or in an insulated container with ice pack and up to 3 months in a freezer. In the absence of a refrigerator or cooler, local materials such as banana stalks can be used as storage for a lesser number of hours.

4. Label correctly the sterilized containers each day. Each sterilized bottles containing expressed milk should be labelled with the date and time the milk was expressed. This will guide the mother on the "expiration" date/time of the stored milk or when to use and discard it.

For example, if the mother expressed the milk on a Monday, 7:00 AM (day 1) and stored it in the refrigerator, it should last until Tuesday, 7:00 AM and therefore should be consumed within that time or discarded.

5. Do not fill container completely.

Breastmilk when cool, rises, so give allowance if it is stored. If a 4-ounce baby bottle is used, put about 3-1/2 ounces of milk in it, that is, slightly less than the size of the container.

6. Discard any defrosted milk. Expressed milk taken out of the refrigerator and allowed to warm or melt (this is also called "thawing" process) but is not taken by the infant after 6 hours should not be re-used for breastfeeding. Unused thawed milk should be discarded.

This includes excess milk or milk not fully consumed by the infant since such milk tends to get spoiled.

7. Replace expressed milk as soon as possible. Any milk used up from the frozen milk supply should be replaced as soon as possible. This would maintain the supply of frozen milk and allow the mother to empty her breasts frequently for better milk production.

8. Check stored milk after brown outs. If brown-outs or electric power interruptions occur, check after each brown-out to see if the milk has thawed out.

To delay the thawing out process, put the bottle(s) in a plastic bag with ice. If milk thaws out, keep it refrigerated and give it to the baby within 24 hours.

Do not refreeze milk that is not consumed in this time period. Discard it or throw it away.

REVIEW QUESTIONS I

Directions: Supply the missing word(s) to complete the sentence.

- 1— 2. The first maneuver in manual expression of milk is to position the thumb and first two fingers about _____ inches behind the nipple. This approximates the location of the _____ behind the nipple.
- 3— 4. The rolling motion of the thumb and fingers first _____, then _____, compresses that part of the breast where milk is stored.
5. Pulling the nipple can cause _____.
6. Changing the thumb and finger positions allows adequate _____ of all milk storage areas.
- 7— 8. The first maneuver in expressing the milk by means of a breast pump is to _____ the _____.
9. The horn of the breast pump should be placed well over the _____.
10. The clean glass or plastic container of the breast pump should be boiled for _____ minutes.
- 11—12. Breast milk stored at room temperature lasts for _____ hours while that stored in a refrigerator may last for _____ hours.
- 13—14. Sterilized bottle containing expressed milk should be labelled with the _____ and _____ the milk was expressed.
15. Bottles for storing breast milk should not be filled completely because it _____ when cool.

II. TIPS TO HELP THE WORKING MOTHER

A mother who decides to maintain breastfeeding while at work needs a lot of encouragement and support from others, particularly if this is her first time. The following tips may be given to the mother to help her prepare for her breastfeeding task.

A. Giving Stored Expressed Milk to the Baby

There are some suggestions for the successful maintenance of breastfeeding while at work. There are:

1. Have the determination, patience and confidence that she can do it. A positive attitude and psychological state of the mother will promote the let-down reflex.

2. Try to increase the milk flow by employing these measures.

- a. Relax for at least 5 minutes before expressing the milk by sitting, lying and taking a few breaths.
- b. Massage the breast for one minute before expressing the milk. This is done by pressing firmly into the chest wall, starting at the top of the breast (see Figure 9). The fingers are moved in a circular motion on one spot on the skin and transferred to another area in a circular direction around the areola.

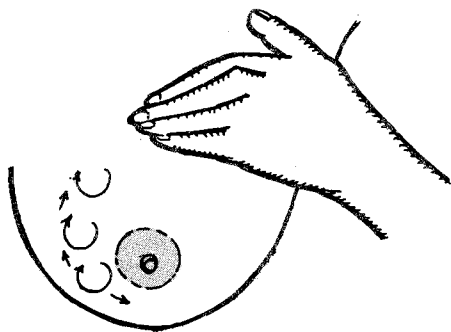


Fig. 9. Massaging the Breast

Reference:

Nursing Mother's Association of the Philippines. *Breastfeeding: A Guide for Nurturing Your Baby*, Manila, 1983, p. 27.

- c. Express the milk for about 7 minutes.
 - d. Massage the breast again before resuming expression of milk for another 6-7 minutes, making a total of 15 minutes for one breast.
 - e. Do the same for the other breast.
3. Have the necessary equipment/materials ready. This will include:
- a. Refrigerator at home and if possible at work. Or else, bring a cooler (styro-foam) with ice to the office. Women who are able to send their milk at home at mid-day may bring a smaller container or a wide-mouth thermos with ice. In the absence of a refrigerator, local cooling materials may be used such as "banana stalks".
 - b. Small glass bottles or container (for example — 4 oz. baby bottle) for expressed milk.
 - c. Small towel to place on the lap while expressing milk, to dry the breast and/or wrap the breast pump in after use.
 - d. Small plastic bags to prevent spillage of milk. On returning home these can be filled with water for freezing.
 - e. Baby bottles and sterilizing equipment.
 - f. Breast pump (optional).
4. Thaw the frozen milk before giving to the baby. This could be done by running cold water over the container of frozen milk. If the mother wishes, she may warm the milk container, but the milk should not be boiled. Boiling the milk may destroy the nutritive and immunological properties of milk.
5. Keep a chart of the times when the baby feeds. One week before a mother goes back to work she should list the time she breastfeeds the baby. This will give her an idea of the best times to express milk while she is at work. It becomes a guide for collecting milk.

6. Practice demand feeding. Feed the baby on demand during the weeks or months

before returning to work. Purely breastfeeding will guarantee an adequate supply of milk.

7. Express milk from the breast the baby nursed on last. Start expressing milk from the breast which the baby nursed on last. This follows the procedure for breastfeeding and prevents overfilling of the breasts. It will also ensure equal stimulation of the breasts.

8. Arrange for refrigerated milk to be given to the baby. Instructions should be given to the person who will feed the baby while the mother is at work. The bottle expressed earliest should be given first followed by next and so on.

9. Nurse the baby at the breast whenever at home. The mother should utilize every opportunity to nurse the baby at the breast whenever she is at home.

10. Express milk while at work. This is needed in order to maintain the supply of stored milk. In doing this, the mother also avoids the risk of losing her milk supply completely because her breasts are stimulated to produce milk even when the baby is not actually breastfeeding.

11. Do not give supplements to the baby. Any other food such as water, juice or cereal should not be given to the baby until he is 4 to 6 months. This will cause the baby to feed less on milk and to suck less on the breasts. Thus, the mother may lose her milk supply.

12. Get as much rest and liquids as possible. A mother who is not tense will have a better let-down of milk. When the breasts are stimulated to produce more milk, the mother is better prepared for "growth spurts." Growth

spurts are periods when the baby feeds more, as he rapidly gains weight. They usually occur around the 10th to 14th day, and then about every 2 to 3 weeks in the first 3 months.

III. OTHER BREASTFEEDING OPTIONS

The other breastfeeding options for the working mother shall be briefly discussed.

A. Wet Nursing

Wet nursing means finding another lactating woman who is willing to breastfeed the baby while the mother is at work.

If the mother chooses to take this option, the following guide should be considered.

1. Make sure the wet nurse is in good health, eats extra food she needs and drinks more fluids to make up for her additional output.
2. Ideally, the baby of the wet nurse and that of the working mother should be born not more than a month apart.
3. Mother should continue to manually express her milk so as not to stop the flow of the milk.

B. Take the baby to place of work

Another option for maintaining breastfeeding while mother is at work, is to take the baby to work, that is, if conditions and her employer would permit this. An alternative would be to bring the baby to a location close to the mother for breastfeeding. If the mother work very close to that place, she may be able to go "home" for feeding.

ANSWERS TO REVIEW QUESTIONS

1. 1-1/2
2. milk pools
3. backward
4. forward
5. tissue damage
6. coverage
7. pump
8. bulb
9. areola
10. 20
11. 6
12. 24
13. date
14. time
15. rises

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POST TEST

Directions: Encircle the letter corresponding to the best answer.

Situation: Mrs. Luisa de Villa works as a bank teller. She gave birth in May and went back to work on the third week of July. Having breastfed her newborn baby, Luisa decided to maintain breastfeeding by means of expressing and storing breastmilk.

She attempted to express milk manually by first placing her thumb and first two fingers 2-1/2 inches behind the nipple. With her fingers far apart, she pressed these fingers backward towards the chest wall and rolled her fingers forward.

To her frustration, breastmilk did not come out.

1. What motion did Luisa do incorrectly?

1. Placing her thumb and first two fingers 2-1/2 inches behind the nipple
2. Placing her fingers far apart from each other
3. Pressing her fingers backward towards the chest wall
4. Pressing her fingers forward in a rolling motion

- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 2 and 4

2. In addition to No. 1, Luisa may be advised to do the following to adequately drain the milk pools in her breast

- a. cup the breast
- b. squeeze the nipple
- c. do motions in the same area of the breast
- d. rotate the thumb and finger positions

3. In using the breast pump, which two suggested motions is similar to pressing on the breasts in the area of location of the milk pools to facilitate milk expression?

- a. Pumping the bulb of the breast

pump.

- b. Putting the horn well over the areola.
- c. Putting the horn over the nipple.
- d. Releasing the pump.

- a. 1 and 2
- b. 1 and 3
- c. 2 and 4
- d. 3 and 4

Situation: Like Luisa, Mrs. Joy Cruzes is a working mother who gave birth to her first born. She was successful in expressing her milk with the use of a breast pump.

Feeding her baby she thought, would not be a problem because she stores her expressed in the freezer of her refrigerator. She also made sure that the bottles were sterilized before using them for the milk. While at work, her househelp fed the baby with the stored breastmilk.

4. Joy should be reminded that expressed milk stored in a refrigerator lasts only for

- a. 12 hours
- b. 18 hours
- c. 24 hours
- d. 48 hours

5. Sterilization of the bottles may be done by

- a. washing well with soap and water.
- b. washing well with soap and water and rinsing with boiling hot water.
- c. boiling the bottles for 5 minutes.
- d. boiling the bottles for 20 minutes.

6. One day, a brown-out occurred while Joy was at work. A day later, her baby got diarrhea. She concluded that it was due to the frozen milk. Her officemates gave several suggestions which could have prevented spoilage of the milk, which of these suggestions are justified?

1. Keep the milk in the refrigerator while it thaws.
2. Delay the thawing out process by putting the milk in a plastic bag with ice.
3. Discard any defrosted milk not used by the baby after 6 hours.

4. Refreeze the milk not consumed by the baby when the electricity returns
 - a. 1 and 2
 - b. 2 and 3
 - c. 1 and 4
 - d. 2 and 4
7. Maintaining breastfeeding while at work by giving expressed milk to the baby would not be successful if the mother.
 - a. practices demand feeding.
 - b. takes too much liquids.
 - c. uses a breast pump.
 - d. gives supplement to the baby.
8. Thawing the stored frozen milk before giving it to the baby is done by running cold water over the container or by
 - a. boiling the frozen milk.
 - b. shaking the container of frozen milk.
 - c. warming the milk container.
 - d. removing the frozen of "icy" part of the milk.
9. A mother may be able to express only small quantities of milk at first, but gradually milk increases. To prepare adequately for expressing milk, a mother needs
 - a. patience and confidence to do it.
 - b. to employ a wet nurse.
 - c. rest and relaxation during work.
 - d. the employer's permission to express milk.
10. A working mother could still continue breastfeeding even while at work by wet nursing. This means
 - a. bringing the baby to her place of work.
 - b. giving expressed milk whenever the baby is wet.
 - c. finding another lactating woman to breastfeed the baby.
 - d. going home to breastfeed the baby.
11. To be able to maintain her milk supply, a working mother should
 - a. express milk while at work.
 - b. keep a chart of the times when the baby feeds.
 - c. thaw the frozen milk before giving it to the baby.
 - d. arrange for refrigerated milk to be given to baby
12. In order to guide a working mother in collecting milk she should
 - a. practice demand feeding.
 - b. date and number the bottles of stored milk
 - c. nurse the baby at the breast whenever at home.
 - d. keep a chart of the times when the baby feeds.
13. A mother could prepare for the period when the baby feeds more and rapidly gains weight by
 - a. getting as much rest and liquids as possible
 - b. practicing demand feeding before returning to work.
 - c. nursing the baby at the breast whenever at home.
 - d. expressing milk while at work.
14. Expressing milk should be started from the breast
 - a. which feels fuller.
 - b. the baby nursed on last.
 - c. the baby nursed on first.
 - d. often sucked by the baby.
15. In a wet nursing, it is necessary that the wet nurse's baby is
 - a. as healthy and strong as the mother's baby
 - b. born not more than a month apart from the mother's baby.
 - c. born prematurely before that of mother's baby.
 - d. fed by expressed milk similar to the mother's baby.

ANSWERS TO POST TEST

1. a
2. d
3. c
4. c
5. d
6. b
7. d
8. c
9. a
10. c
11. a
12. d
13. a
14. b
15. b

RECOMMENDED FOLLOW-UP

Learning and teaching the skill of expressing milk manually or by a breast pump requires sufficient practice. You are therefore enjoined to practice the principles illustrated in this module on yourself before you will be able to teach it to others.

Module 4

Common Problems on Breastfeeding

INTRODUCTION

A great percentage of mothers is aware of the benefits of breastfeeding. Yet, studies show that many of them are still hesitant to practice or continue breastfeeding. A survey done in the three cities of Mindanao reveals that among the reasons why mothers do not breastfeed or stop breastfeeding are certain problems on the practice of breastfeeding. These problems are not only preventable but also remediable. However, it has been observed that mothers are not often aware of these measures. Thus, it will be helpful for health workers to be equipped with the

necessary information on breastfeeding problems and their remedies. This will enable them to motivate mothers to breastfeed or continue breastfeeding.

This module is designed to provide health workers with the basic knowledge in dealing with breastfeeding problems. This module consists of three parts: (1) problems relating to the mothers' condition; (2) problems relating to the infant's condition, and (3) problems relating to the mother's attitudes and misconceptions about breastfeeding.

OBJECTIVES

Upon completion of this module, the user should be able to:

1. Identify the causes of given problems in breastfeeding.
2. State appropriate remedies of given problems in breastfeeding.
3. Give the correct and relevant information necessary to counteract common misconceptions regarding breastfeeding.

RECOMMENDED PREPARATION

To gain maximum benefit from this module, the user is advised to read the following modules.

Module 1 — Foundation for Effective Milk Production and breastfeeding

Module 2 — Practice of Breastfeeding

I. PROBLEMS RELATING TO THE MOTHER'S CONDITION

Studies have shown that some reasons why mothers do not want or are hesitant to breastfeed are perceived inadequate milk supply, nipple problems, and discomforts related to breastfeeding such as engorged breasts. These conditions and appropriate remedial measures are described.

A. Inadequate or Absence of Milk

Inadequate or absence of milk supply may normally be experienced by the mothers for 2-4 weeks after delivery because it takes sometime for milk to come out. However, some mothers are able to initiate breastfeeding and later experience a decreasing milk supply.

Psychological factors such as lack of confidence or motivation to breastfeed, anxiety or worry and fatigue may inhibit the let-down reflex thereby resulting in inadequate milk supply.

Encouraging the mother express her feelings, anxieties, doubts or fears is an effective way not only of giving her emotional support but also of further determining the cause of her anxieties and fears. For example, a mother who experienced painful breasts after the first few weeks of delivery may be less motivated to breastfeed. Her fear for pain may inhibit her let-down reflex and therefore, decrease her supply of milk. This mother should be aware of the techniques and the benefits of breastfeeding.

B. Engorgement or Swelling of Breast

Engorgement or swelling of breast is normal from the third to the seventh day of delivery. The breasts appear full and reddish, hard and

usually painful to touch, and the mother may develop fever and chills.

These signs and symptoms are brought by accumulation of milk in the ducts causing the milk to seep through the tissues. The accumulation of milk may result from one or more of the following:

1. Oversupply or overproduction of milk.
2. Incomplete emptying of the breast.
3. Blocking of milk from moving out of the ducts due to tight bras and sleeping on one's stomach.
4. Drying up of secretions on the nipples.

The primary means of relieving engorgement is to empty the breasts of milk. We know that this can be done by the infant's sucking or by milk expression. Since the soreness of the mother's breasts makes it difficult for the mother to continue feeding from the breast by any means, some measure to alleviate the pain become necessary. Some mothers obtain relief by applying ice packs for 20 minutes at a time while others find hot packs applied for the same duration give better relief.

If the infant cannot grasp the nipple to suck strongly, two measures can be emphasized:

1. hot pack can be applied to both breasts for a few minutes before feeding to promote drainage and softness of the breasts, thus allowing the baby to suck;
2. expressing some milk will make it easier for the baby to suck.

The mother may also be advised to make the baby suck regularly, beginning with the fuller breast. Rotating the position of the baby so that the pressure for sucking is distributed to the different parts of the areola is helpful. The mother may sit or lie down when feeding to accomplish the rotation.

C. Blocked Ducts

A blocked duct in the breast may be manifested by a hard, tender and reddish lump.

This condition is caused by accumulated

concentration of milk in the ducts, obstruction of milk flow due to tight clothing or dried secretions on the nipples. If this is neglected, infection sets in.

The remedies are the same in breasts engorgement. To help drain the milk, a gentle massage in the blocked area with strokes towards the nipples may be done while the baby is being breastfed. Dried secretions on the nipple may be softened and removed with a warm compress between feedings.

D. Flat Nipples/Inverted Nipples

Nipples are said to be flat when they are sucken and do not protude. Nipple in this condition do not come out when squeezed at the base but seem to sink into the breast.

It is natural for some mothers to have flat nipples. However, a mother with this type of nipples may still be able to breastfeed by doing the following nipple exercises 3 months before delivery.

1. Pull and stretch the nipples daily in all directions (Figures 1 and 2)

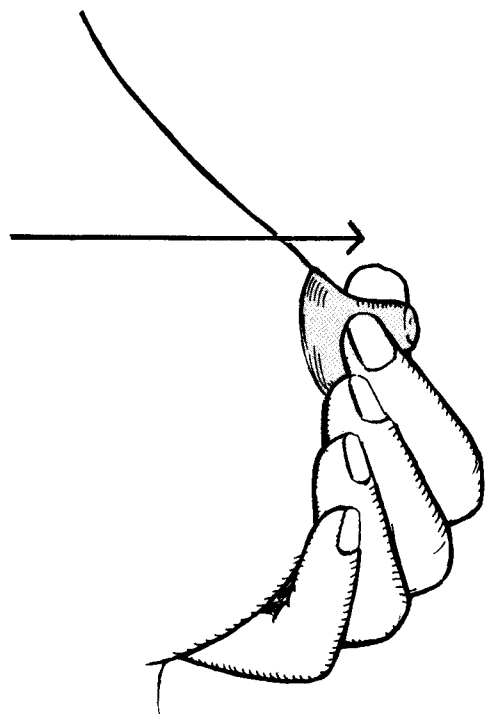


Fig. 1. Pulling of the nipple.

2. Place the thumbs on either side of the nipple and press in firmly against the breast tissue. At the same time, push the thumbs away from each other. (Figure 2)

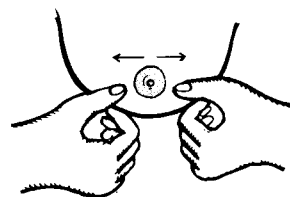
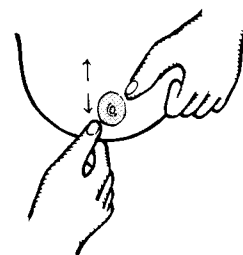


Fig. 2. Stretching the nipple in two directions.

Certain practices during breastfeeding may help the baby get hold of the flat/inverted nipple of the mother. Some of these are:

1. holding the breast while breastfeeding to help the baby get hold of the nipples.
2. using the breast pump before breastfeeding to pull the nipples out.
3. leaving a drop of milk on the nipple to provide the child with stimulant and appertizer. The breast, should be offered patiently and gently into the baby's mouth with the nipple and areola fully inside;
4. Using nipple shields (Figure 3) for a few days until the nipples are stretched out. Milk nips may be bought commercially or the nipple ring that holds the rubber teeth to the nursing bottle may be used instead. They may be worn under the bra for short periods and 8 to 10 times a day.

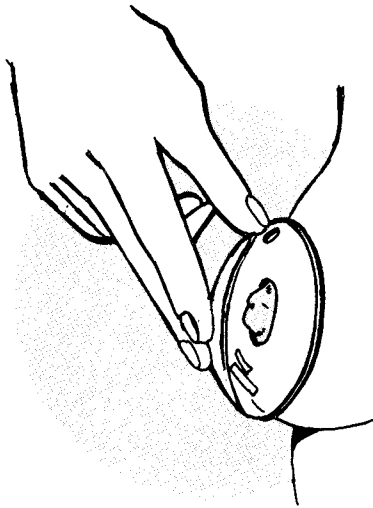


Fig. 3. Nipple Shield

Reference: In "Nutrition in Pregnancy and Lactation", by B. S. Worthington-Roberts, et al. St. Louis, Mosby, 1981, Page 202.

E. Sore or Cracked Nipples

A mother's nipple may become sore or painful (without any apparent break in the skin except for some reddening) at any time during lactation. It is usually common in the early weeks because of the following: friction caused by the baby's sucking on inadequately prepared (toughened) nipples; the baby's unsuccessful attempts at sucking due to improper positioning or flat nipples; softening of the skin due to constant wetting of the nipples; and irritation from clothing.

Sore nipples may result in cracked nipples when unattended to, the mother experiences more pain or even bleeding in this condition.

One of the measures to prevent or lessen the chance of sore nipples is to make the nipples tough before delivery or even before the baby starts sucking them. These measures were adequately described in Module 2.

The following measures are recommended when nursing with the nipples:

1. Let the baby suck on the least affected breast first. The initial sucking is the strong-

est and thus the most painful.

2. Feed before the baby gets hungry to prevent very strong sucking on the part of the baby.
3. Make sure that both nipple and areola are in the baby's mouth.
4. Give short but frequent feedings to minimize the pain of sucking.
5. If both sides are painful, carefully express milk manually to induce flow of milk. The baby can easily suck when the milk starts to flow.
6. Wash the breast with water and dry the nipples after each feeding to prevent prolonged wetting of the nipples.
7. When not feeding, expose the nipples to the air.
8. If air drying is not effective, simultaneous 10-minute exposure to a 20-watt bulb in a gooseneck lamp 2-3 times a day may help. The lamp should be 12-13 inches away from the breast to prevent burns.

F. Harmful Effects of Drugs Taken by the Mothers

Some drugs are harmful to the babies. Mothers who are breastfeeding should avoid taking these drugs or if they do, they should consult a doctor.

radio-active iodine
anti-cancer drugs
diazepam
ergot alkaloids
heroin
chloraphenicol
nalidixic acid
steroids
oral contraceptives
sulphanilamide
sulphapyridine
tetracycline

Reference: Helsing, Elizabeth and F. Sanoje King. "Breastfeeding in Practice. A Manual for Health Workers." Oxford Medical Publications, N.D. 1982

REVIEW QUESTIONS I

DIRECTIONS:

Give 3 possible causes and remedies of the following problems in breastfeeding. Tabulate your answer as shown below

	Possible Causes	Remedies
A.	Inadequate or absence of milk supply	
B.	Engorged Breasts	
C.	Flat/inverted nipple	
D.	Sore/cracked nipples	

II. PROBLEMS RELATING TO THE BABY'S CONDITION

Infants may have certain conditions that may hinder the mother to breastfeed. A thorough understanding of these conditions is needed to help the mother decide for herself whether these really pose a problem or not and if so, the remedial measures that can be taken. Three problems will be discussed: sucking difficulties, allergy and jaundice.

A. Sucking Difficulties

Cleft lip and palate are congenital malformations characterized by incomplete fusing of the central processes around the upper jaw and lip. The clefting may involve only the lip (called cleft lip), may extend into the hard and soft palate (called cleft palate) or may involve both (cleft lip and palate). (Cleft palate may be unilateral (one side) or bilateral (both sides).

If the infant has unilateral cleft lip without palate involvement, he will probably be able to breastfeed without much difficulty. What is needed is to seal his mouth and nose defect enough to let the baby swallow. This has been done by mothers by "holding their infant inward, pressing the cleft as tightly to the breast as possible, and placing the cleft as tightly to the breast as possible, and placing a thumb or index finger over the cleft", thus creating enough suction for the infant to effectively milk the breast. It is also important to keep the nipple inside the mouth in order to continue expressing the milk. Other remedies such as appropriate techniques in feeding and expressing milk and use of dropper or spoon to feed the baby may be used.

Sucking difficulties for reasons other than congenital may have to be remedied by measures that will start the sucking reflex as mentioned in Module 2. The measures include:

1. Placing the nipple and much of the areola inside the baby's mouth and
2. Allowing the nipple of the mother to touch the infant's palate deep in the mouth.

B. Allergies While Breastfeeding

Infants who are purely breastfed and are receiving no food may at times develop allergic manifestations such as rashes and loose stools. These seem to be caused by the breast milk they ingested. Since, breast milk contains anti-allergic properties (see Module 1), two other possible explanations should be looked into.

1. The infant may be reacting to foods or substances the mother has taken that are being transmitted thru the breast milk. Examples of these substances are vitamins, dyes or additives and, more commonly, cow's milk or milk products.
2. There may be other causes of the loose stools. For one, stools of breast-fed infants are naturally looser and lighter-colored compared to bottle-fed ones. There are also gastrointestinal infections which may account for loose stools.

It is important to ascertain whether loose stools are pathological or not by weighing the baby. If the baby gains weight, the loose stooling may be ignored.

The first step to be taken when the baby develops allergy is to ascertain where it is coming from only then can appropriate measures be suggested.

C. Jaundiced Baby

Jaundice (yellowing of eyes and skin) among newborns is sometimes associated with breastfeeding. However, a distinction has to be made between the normal physiologic jaundice and breastfeeding-associated jaundice.

The normal physiologic jaundice usually appears from the third to fourth day of life due to the concentration of a substance called *bilirubin** in the blood. This is brought about by the immaturity of the liver which lacks the enzymes necessary for the metabolism of the *bilirubin*

* a red bile pigment formed from hemoglobin during normal or abnormal destruction of red blood cells by the reticulo-endothelial system.

into the a more soluble and readily excreted form. When the liver matures, the *bilirubin* decreases and jaundice also slowly disappears.

The breastfeeding-associated jaundice is brought about by the substance called *pregnandiol* present in breast milk. The substance suppresses the enzymes responsible for the processing of *bilirubin* into soluble form. Therefore, the concentration of *bilirubin* increases. It starts approximately during the fourth to fifth day of life and peaks on the 10th to 15th day of life.

According to studies, 2-3 days interruption in breastfeeding helps eliminate the jaundice. During this periods, expression of milk may be recommended.

III. PROBLEMS RELATING TO THE MOTHER'S ATTITUDES AND MISCONCEPTIONS ABOUT BREASTFEEDING

Health workers are often confronted with many questions dealing with common misconceptions about breastfeeding. These misconceptions are clarified by citing facts and studies relating to them.

A. The mother should not breastfeed if she is ill

Minor illnesses such as colds and other mild infections should not prevent the mother from continuing to breastfeed her baby. Since the baby is already exposed to the mother's micro-organisms, separation of the mother and child is no longer useful. Breast milk may even offer the best protection. Similarly, a mother with pulmonary tuberculosis may continue nursing while she and her baby are both being treated.

B. A mother who had caesarean should not breastfeed

A mother who has undergone Caesarean operation can still breastfeed. The milk comes in first as quickly after a Caesarean section as it does after a normal delivery. It is recommended that the mother recover from the anaesthetic effects before trying to put the baby to the breast. Expression of milk may be useful before the mother is able to normally

breastfeed. Psychological support is needed for her to gain self-confidence. She needs to dispel her doubts about what she may have heard about the difficulties of breastfeeding.

C. The Baby should not be breastfeed when ill.

Breastfeeding is still recommended even when the baby is ill as in the following situations:

1. When the baby has diarrhea or fever, breast milk is still the best food.
2. When the baby is in the hospital, breastfeeding should be continued.
3. If the baby does not suck well, and the mother's breasts are full, breast expression may be done.
4. Infants with low birth weights must have supplementary food aside from the breast milk.

D. Small breasts provide less milk

A mother with small breasts can breastfeed. Breast size and shape have nothing to do with milk production.

Production of breast milk depends on the milk glands that produce the milk and not on how much fatty tissues surround the milk glands. Enlargement of the breasts during pregnancy is due to the increase in the real secretory structures and not fatty tissue accumulation. Large fat virgin breasts which do not change so much during pregnancy are not useful in the production of milk.

The mechanism involved in milk production is adequately explained in module I.

E. Breastfeeding can cause sagging breast

Breast sagging is due to lack of support of the breast which have gained too much weight during pregnancy. Sagging can easily be avoided by the following:

1. controlling the weight of the mother by proper exercise.

2. use of breast support in the form of a well-fitting bra as soon as the breasts start to grow during pregnancy. A nursing bra can be opened at the front during breastfeeding while still supporting the breasts.

F. Too thin milk and "salty milk" have lesser nutrients

The watery look of breasts milk makes mothers and health workers think that mother's milk is too thin. Mothers and health workers should know that the quality of milk produced by different mothers is very similar to each other. However, it is helpful to stress adequate nutrition to lactating mothers to be able to produce adequate milk.

There are few literature about "salty milk" and that some mothers' milk are saltier than others. Similarly it is not also known whether protein and other substances in a mother's food can pass unaltered into her milk. In the absence of studies on these, it is best to ask a mother to avoid dried fish and salt-ladenfish (bagoong) to insure the high quality of her milk.

G. Tired mothers produce "bad milk" that causes gas pains in the baby

It is not true that the milk coming from a tired mother can cause "kabag" or gas pain in the infant. It is not the milk which causes gas pain but the air being sucked from the mothers'

breasts when the mothers is tired.

There is a tendency for the breasts to have less milk when the mother is tired and therefore, the baby sucks more air than milk. To prevent this, the mother has to have adequate rest periods.

H. Food intake can affect the taste of milk.

Studies have not proven the effect of food on the taste of milk; there is also no evidence that certain foods cause discomfort to the body. Mothers do need to have a balanced diet to maintain adequate milk supply. Observations on the effects of the food on their baby, if they are in doubt, are encouraged.

I. Menstrual flow affects the milk of the mother

A mother may not menstruate at all while she is nursing. However, it is not necessary to stop breastfeeding. Hormonal changes associated with the menstrual cycle may diminish the mother's milk supply but not the quality of milk.

J. Bottle milk should be given to their baby in order to allow the mother to produce more milk.

Bottlefeeding the baby will not help increase the mother's supply of milk. Instead, breastfeeding should be encouraged to stimulate the milk producing cells through regular feeding.

REVIEW QUESTIONS II

Directions: Circle T if the statement is true and F if it is false.

- | | | | |
|---|---|-----|---|
| T | F | 1. | Babies with cleft palate may be stimulated to suck by allowing the nipple of the mother to touch the infant's palate. |
| T | F | 2. | An infant with unilateral cleft lip without palate involvement will be able to feed well as long as satisfactory seal in his mouth and nose defect is formed. |
| T | F | 3. | Loose stools is a manifestation of allergy to milk or food. |
| T | F | 4. | Normal physiologic jaundice usually appears in an infant on the first or second day after birth. |
| T | F | 5. | Breastfeeding-associated jaundice starts from the third to the fourth day of life. |
| T | F | 6. | A mother who has undergone Cesarean saction produces the milk just as quickly as one who had normal delivery. |
| T | F | 7. | Breast milk is still the best food for a baby who is ill with fever or diarrhea. |
| T | F | 8. | Milk production depends on the amount of fatty tissue surrounding the milk fluids. |
| T | F | 9. | The sagging of a breast is due to too much breastfeeding. |
| T | F | 10. | The watery look of breast milk does not reflect its quality. |
| T | F | 11. | Hormonal changes associated with the menstrual cycle affects the quality of the mother's milk. |

ANSWERS TO REVIEW QUESTIONS

I. Any three answers under causes and remedies in any sequence.

PROBLEMS	CAUSES	REMEDIES
A. Inadequate or or absence of milk	1. Psychological factors such as anxiety and lack of confidence or motivation to breastfeed	a) allow mother to express her feelings b) explain benefits of breastfeeding (BF) c) advice on proper preparation for and technique of breastfeeding
	2. fatigue	a) explain effects of fatigue on supply and her health b) explore with mother measures to have adequate rest periods during the day
B. Engorged breasts due to accumulating of milk in the ducts caused by	1. oversupply or over production of milk	a) regular emptying by sucking or milk expression
	2. incomplete emptying of the breasts	b) ice or hot packs c) distribute position of sucking
	3. blocking of milk from moving out of the ducts	d) gentle massage in blocked area with strokes towards nipple e) remove & soften dried secretions in nipple with warm compress between feedings
C. Flat/inverted nipples		a) nipple exercise (Hoffman technique)s
		b) Holding breast while feeding

Common Problems on Breastfeeding

			c) Using breast pump before feeding
			d) Leaving drop of milk on nipple
			e) using nipple shield
<hr/>			
D.	Sore/cracked nipples	1. Friction from baby's sucking	a) Let baby suck on least affected breast first
		2. baby's unsuccessfully attempts at sucking	b) Feed baby before he is hungry
		3. softening of skin to wetting	c) Ensure areola is in baby's mouth during the day
		4. irritation from clothing	d) Express manually
			e) Keep nipple dry
<hr/>			

II.	1. F	7. T
	2. T	8. F
	3. T	9. F
	4. F	10. T
	5. F	11. F
	6. T	

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POST TEST

DIRECTIONS: Circle the letter corresponding to the best answer.

1. Which among the following problems may normally be experienced by mothers for 2-4 weeks after delivery
 - a. inadequate or absent milk supply
 - b. flat or inverted nipples
 - c. engorgement of breast
 - d. sore or cracked nipples
2. A health worker can best help a mother who has lack of confidence in her ability to breastfeed by
 - a. telling her how easy it is to breastfeed
 - b. allowing her to express his feelings
 - c. explaining to her the proper technique of breastfeeding
 - d. recognizing and reinforcing her efforts at breastfeeding
3. Engorgement of the breast is caused by
 - a. very fast flow of milk
 - b. accumulation of milk in the ducts
 - c. constant sucking of the infant
 - d. too frequent breast massage
4. The primary means of relieving engorgement of the breast is by regular
 - a. massage of breast
 - b. application of ice packs
 - c. application of hot packs
 - d. emptying of the breasts
5. Flat nipples can be remedied by
 - a. stretching of the nipples in all direction
 - b. toughening the nipples before breastfeeding
 - c. letting the baby suck often
 - d. squeezing the nipple at the base
6. A mother may have sore nipples by the baby's
 - a. faulty sucking technique
 - b. frequent feedings
 - c. frequent change in position
 - d. congenital defects in the mouth
7. Block ducts can be prevented by the mother's
 - a. taking antibiotics
 - b. applying breast exercise
 - c. feeding the baby regularly
 - d. drying secretions at the nipple area
8. Before the breastfeeding mother starts taking drugs, she must:
 - a. take it after breastfeeding
 - b. stop breastfeeding
 - c. consult the doctor
 - d. take only a small amount at the start
9. The most effective measure to help the mother maintain an adequate supply of milk to advice her to
 - a. eat well balance diet
 - b. have the baby feed regularly
 - c. have plenty of physical exercise
 - d. have adequate rest periods during the day
10. In drying the nipple by exposurc to a lamp, the lamp should be kept at a distance from the breast of at least
 - a. 8 inches
 - b. 10 inches
 - c. 12 inches
 - d. 14 inches
11. An infant who has unilateral cleft lip without palate involvement may be able to breastfeed without much difficulty as long as
 - a. 1 only 1. the cleft lip is first repaired surgically
 - b. 1 and 2 2. a satisfactory seal is formed between the mouth and nose defect
 - c. 2 and 3 3. suction is established to maintain the nipple in the infant's mouth
 - d. 2 and 4 4. the infant has hands to grasp the nipple for sucking
12. Allergic manifestations in the purely breastfeeding infant is a reflection of
 - a. 1 and 2 1. the presence of allergens in the mother's milk
 - b. 2 and 3 2. the infant's reaction to substances the mother has taken
 - c. 1 and 4 3. respiratory infections in the infant
 - d. 2 and 4 4. the naturally loose character of breast milk as compared to formulas
13. The mother who is ill or had caesarean section can still breastfeed a 5-month old infant because

- a. 1 and 2 1. the baby's exposure to the mother's microorganisms removes the usefulness of separating them
 - b. 1 and 3 2. milk comes in just as quickly after the caesarean section as after a normal delivery
 - c. 2 and 3 3. the mother's milk may have more anti-bodies produced when she is ill
 - d. 3 and 4 4. the infant cannot be given any other food except breast milk.
14. The quantity of milk produced by the mother depends on
 - a. the amount of fatty tissues surrounding the breasts
 - b. the shape of the breasts particularly the nipple
 - c. the amount of milk glands in the breasts
 - d. the size of the areola in the breasts
15. Sagging of the breasts can be prevented by measures directed at its cause such as
 - a. 1 and 2 1. the weight control by the mother
 - b. 1 and 3 2. decreasing the interval between breastfeeding
 - c. 2 and 3 3. Use of breast-supporting bras
 - d. 3 and 4 4. not allowing the breasts to fall in the baby's mouth
16. A mother asked a health worker why her milk is too thin and salty. An appropriate response of the health worker is
 - a. "Oh, that is the usual appearance and taste of breast milk, Don't worry about it"
 - b. "Maybe you ate bagoong today, did you?"
 - c. "Too thin and salty milk means they contain less nutrients."
 - d. "Breast milk may differ slightly in taste among mothers but they have similar quality."
17. A mother observes that her baby is often having "gas pains." She attributes this to her milk which she thinks is "bad milk". The health workers can correct the misconception by saying
 - a. "Maybe you have too much milk that's why your baby has gas pains."
 - b. "Milk may cause gas pains but this is nothing compared to the benefits your baby derives from it."
 - c. "Gas pains is not caused by the milk but the air being sucked from your breasts when you are tired."
 - d. "Perhaps your baby stayed too long on one breast. You should alternate the breasts to prevent gas pains in the baby."
18. A mother remarked to the health worker "I am not breastfeeding today because I have my menstruation." What should the health worker reply?
 - a. "A mother who is breastfeeding usually does not menstruate. Maybe you better have your doctor check you if it's really menstruation."
 - b. "You need not stop breastfeeding even if you are menstruating because it does not affect the quality of your milk."
 - c. "Hormonal changes during menstruation may diminish your milk supply so you may wait until your menses stops so that your milk supply will return to normal."
 - d. "Who told you to stop breastfeeding"? "You better consult your doctor."

ANSWERS TO POST TEST

- | | |
|------|-------|
| 1. a | 10. c |
| 2. d | 11. d |
| 3. b | 12. d |
| 4. d | 13. a |
| 5. a | 14. c |
| 6. a | 15. b |
| 7. b | 16. d |
| 8. c | 17. c |
| 9. b | 18. b |

RECOMMENDATION FOLLOW-UP

Understanding and applying principles of health education is very important in clarifying misconceptions of mothers regarding breast-feeding. Module 5 will be useful in this regard and is therefore recommended.

Module 5

Utilizing Health Education Strategies in Promoting Breastfeeding

INTRODUCTION

Health workers are cognizant of the need to promote breastfeeding for healthier babies and children. In their efforts, they are constantly confronted with various problems of mothers such as inadequate knowledge, negative attitudes and inappropriate practices related to breastfeeding. The health workers' ability to identify and respond to these learning problems/needs is influenced by two categories of factors: their own knowledge, attitudes and skills related to breastfeeding and the adequacy of their knowledge and skills in the educational process, methods and principles.

The first four modules on breastfeeding

hopefully have addressed the first category of factors. This module is intended to address the second category of factors. It deals specifically with the steps of the educational process and the application of learning principles in the teaching of mothers to promote breastfeeding. It is divided into three parts:

1. assessing learning needs of mothers
2. meeting learning needs of mothers
3. evaluating learning of mothers.

Applications to a variety of situations are illustrated in tabular form.

OBJECTIVES

On completion of this module, you should be able to

1. Assess the learning needs relating to breastfeeding of a mother in a given situation.
2. Formulate objectives based on learning needs.
3. Select the method(s) of instruction appropriate to a given objective or situation.
4. Apply selected learning principles to a given teaching situation.
5. Identify the appropriate criterion to evaluate a mother's learning.

RECOMMENDED PREPARATION

This module will help you on how to teach the mothers. The following modules will help you in what to teach them.

1. Module 1 — Foundation for Effective Milk
2. Module 2 — Practice of Breastfeeding
3. Module 3 — Breastfeeding and the Working Mother
4. Module 4 — Common Problems in Breastfeeding

1. ASSESSING LEARNING NEEDS OF MOTHERS

A mother's decision to breastfeed stems from her understanding and acceptance of the benefits of breastfeeding. A pleasant and successful breastfeeding experience or practice, in turn, usually depends on her knowledge and skills regarding proper breastfeeding preparation, techniques and maintenance. Her favorable attitudes towards breastfeeding are influenced to a great extent by the absence of problems or her ability to cope with problems in addition to the first two factors already mentioned. All these (underlined phrases) represent desirable client outcomes that health workers would want to see in mothers. When desired outcomes are not manifested, a need or problem may be said to exist. A learning need or problem can be met or solved by health education or health instruction.

Assessment of the mother's learning needs involves gathering information relevant to the need and analyzing such information to define the need in terms of the specific factor(s) that hinder(s) a desired client behavior or that account(s) for an undesirable behavior. It should

begin at first contact of the health worker with a mother or her record.

Some commonly used methods of gathering information that health workers may employ are the following:

1. Record review. Looking at the mother's chart in the health center or hospital where she had her prenatal check-up and/or delivery may reveal such information as the manner of delivery, whether she breastfed her other children, or other information that may have a bearing on the problem identified or may give a clue to an existing problem.

2. Interview. This is a method by which the health worker directly asks the mother questions which would help him/her identify or define the problem. Possible questions that may be asked are:

- a. Will the mother breastfeed her baby? Why or why not?
- b. If this is not her first baby, how was her previous breastfeeding experience?
- c. Did she have any problems in breastfeeding?
- d. When did she start breastfeeding?
- e. How long did she breastfeed?
- f. When does she usually introduce supplementary food?
- g. Does she practice any preparation for the breasts before she breastfeeds?
- h. What beliefs does she have regarding breast milk and breastfeeding?

3. Observation. This involves determining the condition of the breasts, the quality of the baby's sucking and the condition of the infant or mother by physical examination.

Table I. shows examples of information gathered in certain situations that provided the bases for the corresponding needs/problems identified. These needs can be categorized into individual or group needs.

Table I. Sample Assessment of Learning Needs of Mothers

INFORMATION GATHERED AND METHOD USED	LEARNING NEEDS IDENTIFIED BASED ON ANALYSIS OF OBTAINED INFORMATION
1. Mother (when visited at home) was seen wearing a rattan crown after delivery and putting a papaya fruit's sap on the mother's breast's (observation). When asked why she is doing this, mother replied, "I want to try to breastfeed my baby and since I am not sure if I will have adequate milk, I am trying out these means which, according to some, will give me an adequate milk flow." (interview).	a. Mother lack knowledge on the mechanism of milk production. b. Mother has a desire to breastfeed. There is a need to reinforce and maintain that decision.
2. Mother's record states that she breastfed her first baby and now she is reluctant to do it again because of the sore nipples she acquired (record review) the first time. When asked if she did anything to prepare her breasts before delivery she said no. When asked what she did, she said that she first showed it to her friend and stopped breastfeeding. Nobody advised her on what to do (interview).	a. Mother lack knowledge and skills on proper preparation of breasts for breastfeeding. b. Mother may have developed an unfavorable attitude towards breastfeeding because of her past experience.
3. A breastfeeding mother developed engorgement of her breasts about the 5th day after delivery. She went to the health center to borrow a breast pump for she knows that this might relieve the engorgement. When asked if she tried letting her baby suck, she said yes but her baby was unable to (interview). When mother started using the pump, it was observed that she could not express milk due to poor technique (observation).	a. Mother has some knowledge on what to do for breast engorgement but lacks skill in the correct technique of using the breast pump.
4. In barangay X, there are about 4 newly delivered mothers who are working. Two (mothers A and B) had a previous experience of breastfeeding and intend to do it again for their new baby. Mother C does not know what to do since this is her first baby. Mother D does not want to breastfeed due to a previous unsuccessful attempt.	a. Mother C has lack of knowledge and skills re-breastfeeding while working. b. Mother D has an unfavorable attitude towards breastfeeding while working due to a previous unsuccessful attempt. c. Mother A and B have favorable experiences on breastfeeding while working, which need to be reinforced and utilized for influencing mothers C and D.

II. MEETING THE LEARNING NEEDS OF MOTHERS

The definition of the learning needs of mother can now provide the basis for the formulation of objectives and selection of health education strategies to meet these needs.

A. Formulation of Objectives

Objectives describe the desired behavior that the mothers should manifest after the learning period. They usually begin with an action verb which is observable and measurable.

Some examples of objectives are:

1. Mother will be able to explain how breast milk is produced.
2. Mother will be able to show the proper way of using the breast pump.
3. Mother will decide to breastfeed her baby even while working.

In the same manner that the learning needs may be due to 3 factors (i.e., lack of knowledge, lack of skill and unfavorable attitude), objectives may also be categorized into cognitive (knowledge), psychomotor (skills) and affective (attitudes) domains. These three domains are illustrated by examples 1, 2 and 3 above, respectively.

B. Selection of Instructional Methods

Health workers may employ various instructional methods on a one-on-one or group situation. A group may be small (10 members or less) or large (more than 10 members). Some of the more commonly used methods are the following:

1. **Lecture.** A lecture is a method that is similar to telling; however, it is more of an exposition while telling is more of a narration. It is useful in explaining a new idea/concept or clarifying difficult concepts to a large group of people.

A lecture may be used by a health worker, for example, when:

- a. he wants to give a bird's eye view of the breastfeeding program of the government.
- b. he wants to arouse interest in a new project or program regarding breastfeeding promotion.
- c. he wants to give adequate explanation on any breastfeeding concept or practice.
- d. the needed information and knowledge on breastfeeding cannot be obtained by the mothers on their own.

Practical guidelines on giving a lecture are given in Appendix 1 of this module (p. 70).

2. **Small group discussion.** This is a method in which a number of persons (3 – 10) interact with one another to achieve an objective, clarify an issue or solve a problem.

In a small group learning situation, the health worker has a lot of opportunities to bring into open negative attitudes and misconceptions of mothers towards breastfeeding. This rarely happens in a big group where the relationship between the trainor (health worker) and the trainee is distant and formal. The group discussion, likewise, provides mothers opportunities to take responsibility for their observations and insights, express freely their ideas and share experiences with others. This method is very useful in developing desirable attitudes among mothers.

Practical guidelines in conducting a small group discussion is given in Appendix 2 of this module, page 71.

3. **Brainstorming.** This is an extensive discussion group in which spontaneous suggestions or opinions are received freely and uncritically. Brainstorming encourages creative thinking, problem-solving and decision-making among mothers of the group.

A brainstorming session needs a facilitator who has the ability to stimulate, guide and direct the course of the session, a dependable recorder/secretary who will record on the board all the contributions of each member and a "Group Memory" individual who keeps a written ver-

batim record of contributions of all group members.

The steps involved in a brainstorming session and an illustrative example of one is given in Appendix 3 of this module, page 72.

4. **Demonstration.** This method shows how a technical procedure or technique is done correctly, with proper explanations, to one or more observers. The demonstration should be visible and should be followed by a return demonstration. The development of skills such as doing nipple exercises, manual expression of milk and the use of a breast pump require a demonstration and adequate opportunities for practice for the learner.

5. **Role Play.** This method involves a spontaneous acting out of roles. It should be followed by a discussion among the role players and observers of the effects/implications of the role play.

In this instructional activity, mothers may be requested to act out certain roles related to the problems experienced in breastfeeding, and the remedies or solutions they applied to solve the problems.

Mother A, for instance, may relate to Mother B her success in breastfeeding despite several problems she experienced. The role play may end up with Mother B willing to breast-feed her baby.

After the role play, Mother A and Mother B get out of their respective roles and join the group in the discussion for further interaction.

The role play is one effective way of developing desirable attitudes of mothers toward breastfeeding as well as presenting problems in communicating/interacting with mothers and alternative ways of approaching problem situations.

Any of the group instruction methods (e.g. lecture, group discussion, demonstration, role play) may be used for mothers' classes. Mothers' classes are group sessions composed of mothers from 20 – 25 households organized by the health worker in the barangay where he/she is assigned to provide health instruction to mothers. A large group may have mothers with varied learn-

ing needs which a smaller group of mothers with common needs of problems may also be convened.

6. **Individual Instruction.** This is a method of providing guidance to one person in terms of teaching, giving advice or counsel according to a particular need identified.

Individual instruction can be emphasized in various situations such as clinic consultations during prenatal or postpartum periods and home visits. These situations provide adequate opportunities for the health worker to interact with the mother, ascertain her learning needs and provide individual guidance and counselling.

7. **Independent study.** This is a method in which an individual studies a learning material (printed or audio-visual) by himself with opportunities to consult someone who will be able to help him/her on the subject matter under consideration. In this method, the mother is given opportunities not only for self-directed learning of knowledge and skills but also for the development of desirable attitudes towards breastfeeding.

8. **Role modeling.** Health workers can be effective models of mothers for breastfeeding. Doctors, nurses and midwives who “practice what they preach” about breastfeeding serve as good models that mothers may emulate because of their high credibility, status and authority in the community.

One or a combination of the above methods may be used based on the objectives to be attained, the resources available (e.g. place to hold the lecture or group discussion, learning materials such as breastfeeding pamphlets and modules, materials for demonstration) and the demands of the situation (e.g. time available, urgency of the need for instant instruction, etc.).

C. Application of Learning Principles

Whatever method is used, there are certain learning principles that should be followed. Five important principles are given and examples of how they are applied are shown in Table 2.

1. Learning is facilitated in a relaxed, congenial and non-threatening atmosphere.

A mother is more likely to benefit from a teaching session in an atmosphere of comfort and trust (e.g. when rapport has been established between her and the health workers or among members of a group.)

2. Learning is facilitated when the individual is motivated.

A mother who is convinced about the benefits of breastfeeding her child and herself will most likely to learn faster and more about how to be successful in breastfeeding than one who is not. This motivation lies within the mother herself and is called "intrinsic motivation."

Motivation can also be extrinsic — i.e., it can be enhanced by external factors of reward or punishment. Examples of extrinsic motivation which health workers can utilize are:

- a. Having clear goals/objectives so the mother will have direction.
- b. Reinforcing a mother's attempts at successful breastfeeding.
- c. Using non-health related motives such as financial advantage, peer's approval, prestige, etc., to encourage the desired health behavior.

3. Learning is facilitated. When teaching is at the level of the learner and considers individual differences of learners.

The health worker's explanations may seem clear to her but the mother may not understand them because of too technical terms or unfamiliar words used. Explanation should be as simple as possible and geared at the level of the students' cultural and educational background.

A good example is explaining the structure of the breasts by using a tree trunk, branches and leaves to represent the parts of the glandular unit (as described in Module 1).

The health worker should also recognize that mother differ in the way and in the speed they learn. Therefore, those who seem to be

slow in learning must be given sufficient time to learn at their own pace.

4. Learning is facilitated when the individual is actively involved.

This is particularly true in the development of skills. A mother will learn how to use the breast pump by actually doing the procedure than just observing how it is done. Explaining with visual aids will promote learning more than mere explaining because the mother's sense of sight is being utilized in addition to her sense of hearing.

Giving the learner activities to engage in, whether thinking or problem-solving exercises, answering questions, explaining to someone or practising a procedure, relevant to the objectives, is the key to this principle.

5. Learning is built on previous learning.

A mother will learn better if what is taught to her builds on what she already knows. For example, utilizing examples of supplementary food familiar to her will be very helpful in her learning than giving her unfamiliar examples.

6. Learning is more effective with feedback.

Motivation for learning is more when the mother is informed how well she is doing. Giving feedback implies 2 steps:

- a. Determining first whether the mother understood the explanation or demonstration.
- b. Correcting wrong understanding or return-demonstration.

In the use of any method, what is important is that the activities of both the mother and the health worker must apply the above learning principles. Table 2 gives an example of learning activities that may be employed for certain specified objectives and the principles utilized in the activity.

**Table II. Meeting the Learning Needs of Mothers
Utilizing Appropriate Instructional
Activities and Learning Principles**

Objective	Instructional Activities and Resources	Principle Utilized
1. Mother will be able to explain the mechanism of milk production (related to learning problem 1a, Table I)	Method: Individual Instruction	= learning is built on previous learning.
	= Asked M how she thinks her milk is produced.	
	= Based on M's reply, explain with illustration (diagram or picture) the mechanism of milk production.	= learning is facilitated when the learner is actively involved (e.g. sense of sight is utilized by use of diagram or picture in addition to sense of hearing).
	= Define technical terms and use simple words.	= learning is facilitated when teaching is at the level of the learner.
	= After the explanation, ask questions such as How will you ensure that you will have adequate milk?	= learning is more efficient with feedback.
2. Mother will prepare breasts for feeding before delivery (related to learning problem 2a and b) by doing regularly the recommended nipple exercises.	Method: Individual Instruction	
	= Cite experiences of other mothers who did not have sore nipples because they prepared their breast well before delivery.	= learning is facilitated when the mother is motivated (mother may be motivated to learn that sore nipples can be avoided.)
	= Demonstrate*, with clear explanation, each step in the physical preparation of the breasts for breastfeeding.	= Learning is facilitated with feed back.

Note: * may use audio-visual materials showing how to prepare breasts physically for feeding; if self instructional materials are available, may use independent study method.

Objective	Instructional Activities and Resources	Principle Utilized
	<p>Ask mother to return the demonstration of each step and give her feedback on whether she did right or wrong.</p> <p>= Monitor her daily nipple exercises as much as possible.</p> <p>= Bring to mother's attention any observable change in the condition of her nipple.</p>	<p>= learning is facilitated when mother is motivated (seeing a toughening of the nipples will motivate mothers).</p>
3. Mothers C and D will decide to breastfeed even while working	<p>Method: Small group discussion.</p> <p>= Arrange for a gathering/meeting of mothers A, B, C and D.</p> <p>= Introduce them to each other or initiate an activity where they can get acquainted with each other such as dividing (them into 2 pairs one who is breastfeeding being paired with one who is not). Each member of the pair interviews the other member regarding her experience in breastfeeding. The interviewer then reports to the whole group what she gathered from the partner.</p> <p>= Clarify the purpose for the group discussion and allow free sharing of ideas and experiences.</p>	<p>= learning is facilitated in a relaxed and congenial atmosphere. An activity of getting acquainted with each other fosters this atmosphere.</p> <p>= learning is facilitated when the learner is actively involved — e.g. interviewing partner, reporting to the group, sharing experiences.</p> <p>= learning is facilitated when the learner is motivated. When goals are clear, people are motivated to pursue the goals.</p>

= Act as a facilitator for the group-reinforcing, clarifying and helping the members wards the attainment of the goal.

= learning is facilitated with feedback. Reinforcing and clarifying provides feedback to the members of the group.

III. EVALUATING LEARNING OF MOTHERS

Teaching is not equivalent to learning. Having taught or explained does not necessarily guarantee that the person taught or given the explanation understood it. The health worker, therefore, has to determine whether the mother has learned what she is supposed to, or has

achieved a specified objective. The objectives serve as the criteria for evaluation.

There are various methods of evaluation that can be used according to the type of objectives given. Table III gives examples of such methods.

Table III. Evaluating the Mother's Learning:
Sample Evaluation Methods

Objectives	Evaluation Criteria and Methods
1. Mother will be able to explain the mechanism of milk production.	Mother is able to explain verbally or in writing how milk is produced (method: verbal feedback from mother)
2. Mother will prepare her breasts for feeding before delivery by doing the recommended nipple exercises.	Mother does nipple exercises regularly before delivery up to breastfeeding time (method: observation of mother)
3. Mother C and D will decide to breastfeed even while working.	Mother C and D decide to breastfeed their babies while working (method: observation during a follow-up visit or report from others about mothers C and D feeding their breast milk to their babies)

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POST TEST

Directions: Circle the letter corresponding to the best answer.

Situation: A health worker was assigned to 5 families in a community. Among these families were two newly delivered mothers who live near each other. Mother A was a primira who has not made a decision to breastfeed yet. Mother B had already three children, two of whom were breastfeed until 6 months of age and one until 2 months.

1. The information that should provide the basis for the health worker to say that mother A has lack of knowledge regarding the benefits of breastfeeding is her
 - a. being a primipara.
 - b. being undecided whether to breastfeed or not.
 - c. educational background.
 - d. response to the question about the benefits of breastmilk.
2. The area that needs further exploration to determine mother B's learning need is her
 - a. adequacy of milk supply.
 - b. skill in the technique of breastfeeding.
 - c. beliefs about breastfeeding.
 - d. previous experience in breastfeeding.
3. What would be a good objective to achieve for mother A?
 - a. Mother A will recognize the benefits of breastfeeding.
 - b. Mother A will express her beliefs about breastfeeding.
 - c. Mother A will decide to breastfeed her baby.
 - d. To guide mother A in her decision to breastfeed.
4. A method of instruction that may be appropriate for teaching mother A would be
 1. lecture to cover as many topics as possible
 2. small group discussion to allow sharing of ideas
 3. peer teaching to utilize experience of another B
 4. individual instruction to focus attention to mother's individual needs
 - a. 1 and 2
 - b. 2 and 3
 - c. 3 and 4
 - d. 1 and 4
5. The health worker must realize that mother A has a different background from mother B. What factor is most important to consider in teaching mother A?
 - a. She will probably be a slower learner than B.
 - b. She will probably be influenced by B's motivation to breastfeed.
 - c. She will probably want to be different from mother B.
 - d. Mother A and B should be taught separately.
6. The initial step in any teaching session with the mother is to establish rapport among the participating members. This is in line with the learning principle stating that learning is facilitated.
 - a. in a relaxed and congenial atmosphere.
 - b. when the individual is motivated.
 - c. when the individual is actively involved.
 - d. when there is feedback.
7. Teaching is at the level of the learner when the health worker
 1. introduces herself to the mother.
 2. speaks Visayan to a Visayan mother.
 3. defines technical terms.
 4. uses several examples to illustrate his/her point.
 - a. 1 and 2
 - b. 2 and 3
 - c. 1 and 4
 - d. 3 and 4
8. Active involvement of the learner facilitates learning. This is *most* especially true in learning the
 - a. benefits of breastfeeding.
 - b. proper technique of breastfeeding.
 - c. how to schedule feeding time.
 - d. various kinds of food supplements.
9. That learning is built on previous learning can be illustrated by
 - a. asking the mother what she already knows about breastfeeding.
 - b. teaching theoretical facts and concepts about breastfeeding before the practice of breastfeeding.
 - c. using what the mother already know/does as a basis for further explanations/demonstration.
 - d. repeating what the mother has learned previously in the current teaching session.
10. The health worker has an objective: "Mother A will decide to breastfeed her baby." She explained to the mother the benefits of breastfeeding over bottlefeeding. What should be the health worker's criterion for evaluation?
 - a. Mother A recites the banefits of breastfeeding.
 - b. Mother A tells the difference between breastfeeding and bottlefeeding.
 - c. Mother A decides to breastfeed her baby.
 - d. Mother A successfully breastfeeds her baby.

ANSWERS TO POST TEST

- | | |
|------|-------|
| 1. d | 6. a |
| 2. a | 7. b |
| 3. c | 8. b |
| 4. c | 9. c |
| 5. a | 10. c |

RECOMMENDED FOLLOW-UP

Skills in the application of the educational process and principles can be developed only through actual practice. You are therefore enjoined to utilize every opportunity in applying what you have learned in this module to actual teaching situations.

Those who desire more specific guidelines in giving a lecture, conducting a small group discussion or employing the brainstorming method are encouraged to read through Appendix 1, 2 and 3 respectively, according to their need.

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