

# MULTIMEDIA HEALTH TEACHING AND BREASTFEEDING DURATION AMONG MULTIPAROUS WOMEN: A RANDOMIZED CONTROLLED TRIAL

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## ABSTRACT

The main task attained in this study was the determination of the effects of multimedia health teaching on the breastfeeding duration, by comparing the exclusive breast-feeding duration of mothers subjected to multimedia health teaching and exclusive breast-feeding duration of mothers not subjected to the same health teaching. Methodology utilized a randomized controlled trial design; ten mothers were randomly placed in an experimental group (subjected to multimedia health teaching) and ten mothers were placed in a control group (traditional bedside teaching). A one-tailed independent t-test was used to determine if there was a difference at  $p=0.05$  level of significance in the exclusive breast-feeding duration between the two groups. Scores obtained were:  $t\text{-score}=1.548$ ;  $df=18$ ;  $p=0.06$ , hence there is no significant difference. Results obtained revealed that mothers subjected to multimedia health teaching did not have longer exclusive breast-feeding duration than mothers not subjected to the same.

*Keywords: Multimedia Health Teaching, Breastfeeding Duration, Randomized Controlled Trial*

## INTRODUCTION:

Breast-feeding gives the best start in life. It is estimated that over one million children die each year from diarrhea, respiratory and other infections because they are not adequately breast-fed (Brown, et al., 1960). Many more children suffer from unnecessary illnesses that they would not have if they were breast-fed properly (Santos-Ocampor, 1997). Breast-feeding also helps to protect mothers' health (WHO, 1993). Breast-feeding results in many health benefits for both mothers and infants and is widely acknowledged as the optimal way to nourish an infant (WHO, 1989; Institute of Medicine, 1991; American Academy of Family Physicians, 1996; US Department of Health and Human Services, 1984; American College of Obstetrician and Gynecologists, 1997; American Academy of Pediatrics, 1997).

Well-controlled cohort epidemiological study, including more than 2000 subjects, has identified breast-feeding as a practice that protects children, lowering the risks of diseases and death. A review of selected studies showed that infants not receiving breast milk when compared to those on exclusive breast-feeding, the median relative risk of diarrhea morbidity ranges from 3.5 to 14.9 at different ages during the first six months of life (Freachem *et al.*, 1984).

Maternal benefits of breastfeeding included more

rapid return of postpartum uterine tone (Pilleteri, 2003). Postpartum weight loss is also reported (Cunningham, 2001). One study also documented the delayed effects of breast-feeding on ovulation called temporary contraception (Kennedy and Visness 1992). Other benefits reported in studies are delayed risk of breast, ovarian, and endometrial cancers (Heinig and Dewey, 1997).

The findings of Abada (2001) suggested that health institutions and medical professionals can play a significant role in promoting breast-feeding in the Philippines. Thus educational campaigns that stress the benefits of lactation are important strategies for encouraging mothers to breast-feed longer. The decline of breast-feeding in the last decade prompted the Department of Health (DOH) to initiate the formation of the National Movement for the feeding Act of 1992, in addition to nationwide training and networking activities to underscore the benefits of breast-feeding, supporting this nutrition-related measure.

## AIMS AND OBJECTIVES:

In view of these high priority research activities, the researchers wanted to test a cost effective strategy to promote breast-feeding incidence and duration. As student nurses, the researches have worked with post-

partum women in the OB ward of Don Vicente Sotto Memorial Medical Center in Cebu City. They have observed that in this hospital, practices that may promote breast-feeding initiation and continuance include rooming in and the use of pamphlets regarding breast-feeding. The nurse to patient ration is not optimal and it was observed that it is quite not possible staff nurses to do intensive health teachings specifically aimed to promote breast-feeding.

## PRESENT SCENARIO

One study concluded that there is some evidence suggesting that breast-feeding can be encouraged by changes in hospital routine and by giving information to support mothers as well (Perez-Escamilla, 1994). Much of contemporary breast-feeding management is based on ritual, myth, and the defensive validation that, "This is the way we have always done it." The major complaint new mothers relate in patient satisfaction surveys is the absence of consistent breast-feeding information. In order to assure the best possible outcomes for new breast-feeding mothers, consistent, accurate and current lactation care are imperative. The first fourteen days postpartum are critical and requires calibration of the milk supply with the continuance of breast-feeding beyond two weeks. Even in preterm mothers, the amount of milk produced at 10-14 days is predictive of volumes and continuance at three, four, and five weeks (Walker, 2001).

Another study concluded that health system support of breast-feeding women during their hospital stay and early post discharge period is an important factor in their success. Hospitals should monitor closely the actual quality and quantity of care provided by clinical support personnel and should measure their impact on the outcomes on an ongoing basis (Kuan *et al.*, 1999).

The various literatures cited above revealed that educational interventions to promote breast-feeding can improve breast-feeding initiation and duration (Popkin, *et al.*, 1990). Using this theoretical framework the researchers devised a learning tool in the form of multimedia health teaching, hoping that this would augment the current practice of promoting breast-feeding continuance among mothers in the hospital ward. This multimedia health teaching tool consist of a 30-minutes audio-visual presentation aimed to impart the benefits of breast-feeding, principles of lactation, myths, common

problems, solutions and methods of breast-feeding stored in a VCD format.

In this study the effect of multimedia health teaching on the breast-feeding duration of postpartum mothers admitted in Vicente Sotto Memorial Medical Center (VSMMC) was determined. The researchers hypothesized that mothers subjected to multimedia health teaching have longer breast-feeding duration than mothers who were not subjected to the same health teaching.

## METHODOLOGY

*Study Design.* This study was conducted in the OB ward of a tertiary hospital in Cebu City, Philippines. A Posttest only control group design was utilized. The participants included in the study, have met all of the following criteria:

- a. Multiparous
- b. Between 20 to 30 years old
- c. Educational attainment of high school level
- d. Unemployed
- e. Residing within 30 km radius of Cebu City
- f. Willing to participate in the research

The above criteria were set because parity, age, educational attainment, and employment are known to be confounding variables that may affect the result of the study (Abada *et al.*, 2001; Arora *et al.*, 2000; Rentschler 1991; Gulick, 1982; West, 1980). The proximity of residence was included for practical purposes in data gathering. Informed consent was taken before a participant was considered for the study sample.

It was found out that at any given day in the OB ward, there are about 14 to 20 patients that would meet the criteria for inclusion and that the average hospitals stay of postpartum mothers admitted to the ward is 2 to 3 days. In order to obtain an adequate sample size for both the control group and experimental group, the random sampling was done at 4-day interval. This way most of the mothers have been discharged and there would be a new set of mothers in the ward. The researchers randomly assigned the day for the experimental group (mothers subjected to multimedia health teaching) and control group (mothers not subjected to multimedia health teaching but through traditional bedside health teaching). The 10 participants in the control group were selected randomly through fishbowl technique after we have determined 18 qualified mothers. Four days later, the 10

participants in the experimental group were again randomly selected through fishbowl technique after we have determined 16 qualified mothers. The experimental group was then gathered in the conference room and was subjected to multimedia health teaching. The control group was not provided with multimedia health teaching.

After 30 days from the administration of the Multimedia health teaching, the researchers conducted a follow-up visit on the households of both the experimental and control group participants to determine the breast-feeding duration.

### MAIN MEASUREMENT:

The dependent or effect variable was exclusive breast-feeding duration, measured in days. Exclusive breast-feeding means that the child only had breast milk as a source of food. Counting of breast-feeding duration would stop the moment the child has taken mixed source of food (i.e, breastmilk + formula milk, or formula milk alone). The independent variable is the delivery of instruction (multimedia health teaching and traditional bedside teaching). Respondents in the experimental group were subjected to a 30-minute audio-visual presentation aimed to impart the benefits of breast-feeding, principles of lactation, myths, common problems, solutions and methods of breast-feeding stored in a VCD format using a VCD player and a TV set while the control group was subjected to traditional bedside health teaching for 20-30 minutes.

### STATISTICAL METHOD:

Statistical method was employed to determine whether the experimental group will have significantly longer days of exclusive breast-feeding duration when compared to the control group. For this the one-tailed independent t-test in analyzing the data gathered (i.e. the number of days of exclusive breast-feeding) was utilized. The t-test is appropriate for samples of nearly any size but is particularly useful with small sample sizes  $<30$ . The level of significance was set at  $p=0.05$ . Although an argument is occasionally made for setting a less stringent level of significance, such as  $p=0.10$  and that this level of significance might be acceptable in research where no great harm would come from rejecting a true null hypothesis such as in this study, we adopted the  $p=0.05$  level of significance because nursing has accepted the  $p=0.05$  level as the standard in most studies (Nieswiadomy, 2002).

The data gathered were entered in t-test calculator software at [changbioscience.com](http://changbioscience.com) to obtain the t-score, means, degrees of freedom and p-values of the data gathered.

### RESULTS :

**Table 1 presents the results of the mean duration of breastfeeding of both experimental and control group**

Respondent	Experimental Group (days)	Control Group (days)
1	30	3
2	14	30
3	30	30
4	30	3
5	14	30
6	30	14
7	30	30
8	21	30
9	30	7
10	30	14
Mean	25.9	19.1

Data revealed that after 30 days, 7 out of 10 (70%) mothers in the experimental group were still exclusively breast-feeding their children while in the control group only 5 out of 10 (50%) mothers were still exclusively breast-feeding their children.

In the experimental group:

- Two mothers exclusively breastfed their children for 14 days
- One mother exclusively breastfed her baby for 21 days.

Whereas in the control group:

- 2 mothers exclusively breastfed their babies for 3 days, only for the duration of their hospital stay and started to mix the feedings with formula milk after discharge.
- Furthermore, in this group, 1 mother exclusively breastfed her baby for 7 days and 2 mothers exclusively breast-fed their babies for 14 days.

The mean number of days of exclusive breast-feeding for the experimental group was 25.9 days while in the control group the mean was 19.1 days.

Upon initial impression it would seem that mothers in the experimental group have longer exclusive breast-feeding duration compared to the control group. However to determine whether there was a statistically significant difference at  $p=0.05$  level between the two groups, the researchers used the one-tailed independent t-

test. The scores obtained were as follows:  $t$ -score=1.548;  $df$ =18;  $p$ =0.06. The  $p$ -value of 0.06 is greater than  $p$ =0.05. Hence the null hypothesis that there is no significant difference in the duration of exclusive breast-feeding between mothers in the control group cannot be rejected in favor of the alternative hypothesis.

Therefore, mothers subjected to multimedia health teaching do not have longer exclusive breast-feeding duration than mothers who were not subjected to the same health teaching.

When the null hypothesis is not rejected, the researcher/s may become discouraged and start to determine "what went wrong." At the beginning the researchers are particularly prone to start discard their studies when the null hypothesis is not rejected. They may think that such a situation is due to the small sample size, inadequate instrument and all the other limitations that can be identified. But researchers must be objective when considering negative results (those not in agreement with the prediction) because negative results may be as important as positive results. The best thing that can be done is to try to make sense out of the findings and give some tentative explanations for the results (Neiswiadomy, 2002). Thus taking into account all the limitations of the study it can be said that multimedia have some positive effect on the breast feeding duration and its outcome.

The multimedia health teaching included the maximum information that is needed to influence mother's decision to breastfeed. However, the educational interventions that have been cited in the literature review were usually conducted by lactation specialists or nurses as antepartum sessions (Guise *et al.*, 2003). Additional sessions frequently provided were skilled training, such as breast-feeding positioning and latch-on techniques, and questions and answers addressing common fears, problems, and myths (Victora, *et al.*, 1987). These educational interventions mostly lasted 30 to 90 minutes and may range from one to eight sessions (Guise *et al.*, 2003). The results of the study suggested that multimedia health teaching may not take the place of an interactive session done with a trained lactation specialist or nurse in increasing the breast-feeding duration. The multimedia health teaching fell short of the opportunity for question and answer, demonstration and return demonstration of techniques. Another possible explanation is that the effective educational techniques reported in literature are

mostly antenatal sessions. The multimedia health teaching in this study was done postpartum and we have reason to believe that reception of information of stressed mothers after giving birth may not be as high as when one is not under stress.

## **DISCUSSION:**

One limitation in this study is the small sample size. The small sample size is a result of the researchers' effort to control extraneous variables such as parity, age, educational attainment, and employment. The researchers also acknowledged that there are some variables that could not be controlled. But even if the null hypothesis cannot be rejected at the level of significance the researchers have set ( $p$ =0.05), the result of the study approached statistical significance ( $p$ =0.06). Despite the limitations of the study, the results suggested that presenting information through multimedia health teaching may have some effects on the breast-feeding duration.

The use of the Multimedia health teaching was based on the premise that educational interventions on breast-feeding have greatest effect of any single intervention on both initiation and short term breast-feeding duration (Guise *et al.*, 2003). It has been reported in literature that there are several factors influencing feeding duration that affected breastfeeding (Yoon *et al.*, 1996). Through the use of multimedia health teaching the researchers were able to impart the information that would influence the breast-feeding duration resulting in a consequent increase in breast-feeding duration. The most common reasons mothers chose to breast-feed included benefits to the infant's health, naturalness, and emotional bonding with the infant. The most common reasons bottle-feeding was chosen included mother's perception of father's attitude, uncertainty regarding quantity of breast milk and return to work. Factors that would have encouraged bottle-feeding mothers to breast-feed included more information in prenatal classes, more information from TV, magazines, and books, and family support (Arora *et al.*, 2000; WHO, 2001).

## **CONCLUSION AND RECOMMENDATIONS:**

The mode of instruction or delivery of information about the benefits of breastfeeding did not create a variance in the duration of breastfeeding among multiparous mothers.

To clarify the effect of multimedia on breast-feeding duration, additional research using the rigors

of scientific methodology of the randomized trial will be necessary. Such trials should be conducted in a larger population to allow control of many variables known or suspected to confound the result of the study. Another study could be done on the use of

multimedia health teaching antepartum. The researchers believed that the use of multimedia as an educational intervention is both inexpensive and practical tool to improve breast-feeding duration if empirically shown to be effective.

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