

CHAPTER 5 (STUDY IV)**EXTENDED PRODUCT TESTING OF THE METHI BISCUITS VS SWEET BISCUITS AMONG PREGNANT AND LACTATING WOMEN BENEFICIARIES OF THE INTEGRATED CHILD DEVELOPMENT SERVICES.****OBJECTIVES**

To determine :

1. The acceptability of the biscuits among the pregnant and lactating women.
2. Regularity of collection of the biscuits.
3. The degree of sharing of biscuits with other family members.
4. The extent to which the biscuits if taken home would be consumed.
5. The perceived beneficial effects (if any) of the biscuits on the mother and the child.
6. Changes in body weight of the mother and the child as a result of supplementation.
7. Efficiency of distribution of biscuits by the Anganwadi workers.
8. Willingness on the part of the mothers to purchase the biscuits.
9. Attitudes of the Anganwadi workers towards supplementation with biscuits.

MATERIAL AND METHODS

Sample : Out of the 100 ICDS centres in urban Baroda, 10 centres were selected for the present study. The selection of these centres was purposive and was based on the distance of the center from the Faculty of Home Science. Each ICDS centre catered to a population of approximately 1000. The enrolment of pregnant and lactating women in one centre ranged from 20 to 40. For the present study all pregnant women (in all the trimesters) and all lactating women upto 6 months of lactation were enrolled Prior to this, permission was sought from the CDPO (Child Development Project Officer) to conduct the study in these centres. In two centres the pregnant and lactating women were not receiving any food supplement because it was being distributed by the SNP (Special Nutrition Project) located in the same area. In eight centres, the women were receiving Baroda Mix (please see glossary). The total enrolment of pregnant and lactating mothers in the study was 334. The socioeconomic profile of these subjects is presented in the results/discussion section.

Design of the experiment

Figure 15 summarizes the experimental design. The ten ICDS centres were randomly divided into two groups of five each. Group I (5 centres) was given methi biscuits (MB) and group II (5 centres) was given sweet biscuits (SB) which served as the control, for one month (first half of the experiment). In the next month (second half of the experiment), Group I received sweet biscuits and group II received methi biscuits. Thus, a cross-over experimental design was followed. This design permitted the testing of both the types of biscuits on all the subjects. Thus each group served as its own control.

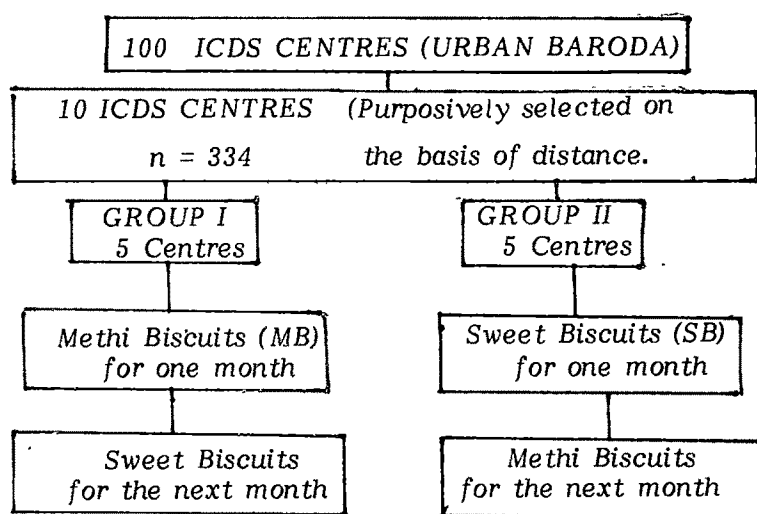


Fig 15 Experimental Design for product testing.

Preparation of the biscuits

Both the methi biscuits and the sweet biscuits were prepared in bulk by Windsor Foods Lts., Baroda. The composition of the biscuits has been already described in Chapter 4 page 132. The composition of the methi and sweet biscuits was similar except that the latter did not contain any methi or fenugreek seed powder. Biscuits were packed in rolls of 100 g (16 biscuits) each and bulk packed in cardboard boxes of 6 kg each.

Distribution of the biscuits

The distribution of the biscuits was carried out at the centre by the Anganwadi worker who was given appropriate instructions. Each subject was provided with a plastic container which could contain two packets of biscuits and she was asked to bring

it to the centre on the day of collection, i.e. every alternate day. A record of collection/left over biscuits was maintained by the Anganwadi worker. The investigator visited each centre once in a week to deliver the biscuits, check the records and supervise the distribution of the biscuits. The time of distribution was between 11 a.m. and 2 p.m. which were the hours when the centre functioned.

Parameters and tools for data collection

1. Background information

At the time of enrolment, the following background information was collected through a structured questionnaire :

- i. Pregnancy/lactation status of the subject
- ii. Trimester of pregnancy/month of lactation.
- iii. Parity
- iv. Ethnic group to which the subject belonged
- v. Type of the family (nuclear or joint)
- vi. Family size and composition.
- vii. Education of the subject and her husband
- viii. Occupation of the husband.
- ix. Per capita income.
- x. Age of the subject.

2. Acceptability of the methi biscuits by the pregnant and lactating women :

To determine the acceptability of the methi biscuits, each subject was given 2 to 3 biscuits to taste and her response to the intensity of the bitterness of the biscuits was recorded on a four point scale ranging from 'not very bitter' to 'bitter' 'very bitter' and 'intolerable'.

3. Acceptability of the methi biscuits among preschool children : Since preschool children were reported to be the major sharers of the maternal supplement, the acceptability of the biscuits was also determined among the preschool children attending the ten ICDS centres. Each child was given one biscuit initially, and more if demanded. A record of the number of children asking for more biscuits and the number of biscuits consumed by each child was maintained. If the child asked for more than two biscuits and could consume at least 5 biscuits, it was considered as acceptable.

4. The regularity of collection of the biscuits by the subjects was also considered as one criterion for acceptability of the biscuits. A register was maintained for this purpose.

5. Sharing of the biscuits with other family members.
6. Consumption of the biscuits by the women
7. Perceived beneficial effects on self and child. For parameters number 5, 6 and 7 a structured questionnaire was used (Appendix III).
8. Weight changes of the mother and the child : Weights of the mothers and the infants were recorded at the commencement of the study; at the end of the first intervention; and at the end of the second intervention. Mothers were weighed on a bathroom-type scale (Detecto) and the infants were weighed on the Salter balance which was available at the centre. Both the scales had an accuracy of 0.5 kg.
9. Efficiency of distribution : For this purpose, a register was provided to the Anganwadi worker and she was explained how to maintain the record for (a) regularity of collection; (b) amount of biscuits given to each subject and (c) amount of biscuits left unconsumed. This information was recorded by the investigator once in a week at each centre.
10. Willingness to purchase the biscuits : At the end of the trial, the subjects were asked if they would buy the biscuits if available at the centre for sale. To determine if they would do so in reality, a few packets of the biscuits (methi) were stocked at each centre for sale. The subjects were told that the biscuits would be available at the centre at a cost of Rs. 1/- per packet of 100 g or 16 biscuits each. The Anganwadi Worker was given instruction not to sell it to anyone except the pregnant and lactating women. She was also asked to keep a record of the packets sold, if any.
11. Attitudes of the Anganwadi Workers : The Anganwadi Workers were questioned about their attitudes/opinions regarding the trial with methi and sweet biscuits. The questionnaire is annexed in Appendix.

Statistical Analysis

The frequency distribution, percentages, means and standard errors were computed wherever applicable. The Chisquare test was used to determine if there were significant differences between the various comparisons made.



Fig. 16 : Pregnant and lactating women beneficiaries of the ICDS. The Anganwadi Worker (left) & the helper (background) look on.



Fig 17 : The Anganwadi Worker distributing the biscuits