Mass media campaign to improve infant and young child feeding practices amongst tribal mothers of Chikhli taluka, Gujarat

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Abstract

Objective: The objective involved evaluating the impact of mass media campaign (MMC) in improving the breastfeeding (BF) and complementary feeding (CF) knowledge and practices of the mothers. Methods: BF and CF Knowledge and practices of 89 tribal mothers with children between 6-30 months was evaluated before and after the MMC in the form of nutrition health education (NHE). Participants were interviewed using a pretested structured questionnaire. Nutritional assessment of children was done using standard anthropometric methods before and after NHE. Findings: Post intervention the mean composite BF knowledge scores increased by almost 100%. After the education mothers knew that prelactals were harmful for the child and the benefits of feeding colostrums. Mean knowledge and practices composite scores for CF increased by 44.78% and 26.56% respectively. Post intervention mothers know the benefits and correct age of initiating complementary feeds. More mothers started preparing special foods for their child ensuring incorporation of foods from all the food groups. The nutritional status of children also showed a significant decrease in the number of children classified as underweight ($\chi^2=20.4$, $p<0.001$) and wasted ($\chi^2=22.7$, $p<0.001$). Conclusion: MMC can produce positive changes in health-related behaviors across populations.

Keywords: Nutrition health education, tribal mothers.

I. Introduction

Over the past few decades, media campaigns have been used in an attempt to affect various health behaviors in mass populations. Huge amounts are spent annually for materials and salaries that have gone into the production and distribution of booklets, pamphlets, exhibits, newspaper articles, and radio and television programs. The mass media campaigns may also be used to convey behavior-change messages that aim to change the publics’ knowledge, attitudes and practices [1]. Communication campaigns involving diverse topics and target audiences have been conducted for decades. Mass media interventions have proven effectiveness in changing individuals’ behavior [2-6] and healthcare utilization [7], reducing stigma [8], breastfeeding and complementary feeding practices [9] and raising awareness of the signs and symptoms of other diseases [10].

One of the health issues that have been continuously addressed at grass root levels is malnutrition among children. Scientific evidence reveals that malnutrition has been responsible directly and indirectly for 60% of all deaths among children under five years annually. Over 2/3 of these deaths are often associated with inappropriate feeding practices and occur during the first year of life. The government of India has always been promoting at the national and international for an exclusive breastfeeding for the first six months and introduction of complementary foods thereafter with continued breastfeeding up to two years which is consistent with the Indian tradition of prolonged breastfeeding and introduction of complementary foods from six months of age [11]. In the past studies have been conducted among the masses to promote breastfeeding (BF) and complementary feeding (CF) practices among women which have demonstrated to have a positive impact [12, 13].

The present study was undertaken with an objective to evaluate the impact of nutrition health education imparted through massmedia campaign in improving the existing knowledge and practices of mothers with respect to BF and CF and to study its effect on the nutritional status of the children.
II. METHODS

Sampling:
The present study was a community based effectiveness trial conducted in the tribal villages of Navsari district of Gujarat. Gujarat has 33 districts and Navsari district comprises of 6 talukas which includes 389 urban, rural and tribal villages. Chikhli a tribal taluka of Navsari district has 88 villages [14]. To identify the villages for the study a map of Chikhli taluka was taken. With Chikhli village as the center point a circle of 15 cm was drawn. The area was divided into 4 zones. Two villages were conveniently selected from two zones. From each village 25 mothers with children between 6-30 months were conveniently sampled making a sample of 100 mothers. However out of 100, 11 dropped out (due to migration, post-partum condition etc), hence data of 89 mothers was considered for analysis.

Data Collection
Baseline data was collected by trained investigator using pretested structured questionnaire. Informed consent was taken from the mothers and they were explained the purpose of the study. The questionnaire included close ended questions related to mother’s knowledge and practices on BF and CF. The questionnaire was developed according to international and national guidelines on infant and young child feeding (IYCF) [15,16]. Each desirable response was given a score of 1, 2 or 3 (different weight for different questions) and an undesirable response was given a score of 0. A composite score was calculated for each aspect and the mothers were ranked into four categories i.e excellent (with a score of 91-100%), very good (76-90%), fair (61-75%) and poor (≤ 60%). The questionnaire was developed in English but was translated to the local language (Gujarati) during administration. To assess the nutritional status of the children a standardized digital balance (100 g sensitivity) and flexitape was used to measure the weight and height of the children respectively. WHO growth standards 2007 [17] were used to classify children under different grades of nutritional status w.r.t weight for age (WFA) and weight for length/height (WFL/H). Weight and heights of individual children were taken every month for 5 months to monitor the nutritional status of the children.

Nutrition health education
Reviewing the baseline responses of the mothers, an assessment of prevailing knowledge levels and practices with respect to BF and CF was done to determine the existing gaps when compared with the national and international guidelines on IYCF. A short film in local language was developed to impart education to mothers in small groups of 8-10 mothers. Mothers were invited at the anganwadi center for viewing the film on a pre decided day. For better viewing of the film by the mothers, use of LCD projector and a big screen was done. The information was disseminated in the form of short messages. Leaflets were also distributed as ready reckoning for reinforcing the messages. The investigator conducted monthly home visits and had interpersonal interaction with the mother on issues of BF and CF. Post data was collected after a period of 5 months as per the base line.

Statistical test:
Chi square analysis using EpiInfo2000 package was done to determine the shifts in number of children in different grades of undernutrition and the change in BF and CF knowledge and practices of the mothers. Paired ‘t’ test analysis was carried out to determine the significant changes in the mean scores of the parameters assessed before and after the intervention using SPSS, version 16.0.

III. RESULTS
The mean scores of the mothers before and after the intervention are summarized in table 1. Table 2 summarizes the baseline and the post intervention data with respect to the number of mothers ranked in different categories on the basis of scores obtained for the three parameters assessed. As indicated a highly significant increase of 100% was observed in the mean knowledge scores of BF post intervention. After the NHE mothers knew the importance of colstrum and that it was undesirable to give prelactals to child after birth. Number of mothers categorized to have excellent BF knowledge scores increased from 2 to 25 after the NHE.

Similarly for knowledge and practices for CF also the number of mothers having excellent scores increased significantly from 13 to 38 and 17 to 55 respectively. After the NHE all the mothers knew about the right age of initiating complementary feeds. Majority of mothers started preparing special complementary feeds for their children incorporating foods from all the food groups.

The nutritional status of the children before and after the intervention is summarized in Figure 1. As evident the number of children classified for normal weight for age increased from 17 to 44 after the follow up period and this increase was found to be statistically significant ($\chi^2 = 20.4, p<0.001$). Similarly children classified as
severely wasted decreased from 10 to 1. Children having normal weight for height increased significantly from 47 to 76 post intervention.

### Table 1: Mean scores of the mothers

<table>
<thead>
<tr>
<th>S.No</th>
<th>Question</th>
<th>Max. Score</th>
<th>Before Mean score ± SD</th>
<th>After Mean score ± SD</th>
<th>% Increase</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Awareness about colostrum</td>
<td>1</td>
<td>0.73 ± 0.45</td>
<td>1.0 ± 0.0</td>
<td>36.99%</td>
<td><strong>5.7</strong>*</td>
</tr>
<tr>
<td>2.</td>
<td>Special name for first milk</td>
<td>1</td>
<td>0.11 ± 0.32</td>
<td>0.82 ± 0.39</td>
<td>645.46%</td>
<td><strong>14.6</strong>*</td>
</tr>
<tr>
<td>3.</td>
<td>Is colostrum good for child</td>
<td>1</td>
<td>0.60 ± 0.50</td>
<td>0.93 ± 0.25</td>
<td>55.00%</td>
<td><strong>6.69</strong>*</td>
</tr>
<tr>
<td>4.</td>
<td>Benefits of colostrum</td>
<td>1</td>
<td>0.14 ± 0.34</td>
<td>0.34 ± 0.48</td>
<td>142.86%</td>
<td><strong>4.43</strong>*</td>
</tr>
<tr>
<td>5.</td>
<td>Duration of exclusive breastfeeding</td>
<td>1</td>
<td>0.63 ± 0.49</td>
<td>0.98 ± 0.15</td>
<td>55.55%</td>
<td><strong>6.68</strong>*</td>
</tr>
<tr>
<td>6.</td>
<td>Are prelactals good for the child</td>
<td>1</td>
<td>0.26 ± 0.44</td>
<td>0.84 ± 0.37</td>
<td>223.08%</td>
<td><strong>11.12</strong>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>6</td>
<td>2.46 ± 1.43</td>
<td>4.91 ± 0.81</td>
<td>99.59%</td>
<td><strong>15.64</strong>*</td>
</tr>
</tbody>
</table>

### Knowledge on breastfeeding

<table>
<thead>
<tr>
<th>Grades</th>
<th>BF Knowledge No. (%)</th>
<th>CF Knowledge No. (%)</th>
<th>CF Practices No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
</tr>
<tr>
<td>Excellent</td>
<td>2 (2.25)</td>
<td>25 (28.09)</td>
<td>13 (14.61)</td>
</tr>
<tr>
<td>Very Good</td>
<td>3 (3.37)</td>
<td>45 (50.56)</td>
<td>10 (11.24)</td>
</tr>
<tr>
<td>Fair</td>
<td>16 (17.98)</td>
<td>27 (30.34)</td>
<td>14 (15.73)</td>
</tr>
<tr>
<td>Poor</td>
<td>68 (76.4)</td>
<td>3 (3.37)</td>
<td>52 (58.43)</td>
</tr>
</tbody>
</table>

Chi square value ($\chi^2$) = 110$^*$

* : p<0.001

** IV CONCLUSION**

Mass media, due to its wide reach, cost-effectiveness and appeal, has been used globally to disseminate information and promote healthy behaviors. Behavior change communication (BCC) strategies involves understanding people’s situations and influences, developing messages that respond to the concerns within those situations, and using communication processes and media to persuade people to increase their knowledge and behaviors.
change the behaviors and practices that place them at risk. Studies demonstrate that BCC is effective when the media and the message are context based, tailored to the needs of the audience, designed to be interactive and motivates the audience to take action [18, 19].

The present study was undertaken with the objective to bring about behavioral changes of mothers with young children (6-30 months) with respect to BF and CF and to bring about an improvement in the nutritional status of the children. Results showed a significant increase in the mean scores on knowledge and practices of the mothers with respect to BF and CF along with the nutritional status of children. Results of a similar study conducted in slums of Delhi using different methods of imparting NHE showed improvement in IYCF practices and nutritional status of children[20]. Similar findings have been reported by study carried out by other investigators in different parts of the country [21, 22]

Gujarat governments has taken up various initiatives like Chiranjeevi Yojana, Bal Bhog Yojana, Vitamin Yukta Poshan Ahar, Nirogi Balak Yojna which are aimed at improving children’s nutritional status. These programs are supported by various mass media materials, developed to disseminate useful messages to the target population. In addition the work force of integrated child development scheme (ICDS) comprising of ASHA worker, anganwadi workers etc are supposed to have one to one interaction with mothers. The *mamta card* provided to expecting mothers, itself is a source of information for pre-post natal care along with BF and CF. In spite of all these efforts malnutrition in the state continues to persist. According to NFHS 3 reports 41.1% of children under 3 were underweight which dropped only by one percent from NFHS-1[23].

Gujarat government’s latest Comptroller and Auditor General(CAG) reported that despite the government’s claim of “providing supplementary nutrition to the targeted children between the year 2007 and 2012, every third child in the state is underweight”[24]. The high prevalence of undernutrition can be attributed to fewer number of functional anganwadis than the number sanctioned by the government and required for full coverage of the targeted population. Hence on one hand the benefits are not reaching the beneficiaries due to poor coverage and on the other the quality of the messages imparted on IYCF practices may not be effective enough to bring about the desired outcomes. Hence the need of the hour is to make use of modules which have proven its efficacy at the field level study and study its success at the larger scale.

Acknowledgements:

The authors would like to acknowledge the support given by the mothers during the study.

Conflict of interest: None declared

Source of Funding: Nil

Ethical clearance

The study was passed by the university ethical committee.

References