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Short report

Is unimpeded marketing for breast milk substitutes responsible for the decline in breastfeeding in the Philippines? An exploratory survey and focus group analysis

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ABSTRACT

Infant mortality and morbidity risk is linked to formula usage. The proportion of Filipino infant formula users rose 6% between 2003 and 2008. It is hypothesized this rise resulted from aggressive formula industry marketing.

We conducted a household survey between April and December 2006 and focus groups in April—May 2007 in The Philippines to examine the association between mothers' exposure to advertising and other information sources and formula feeding decisions. Sixteen barangays (communities) were randomly selected from three purposively selected disadvantaged rural, urban and mixed municipalities. A total of 345 households had children under 24-months age: 114, 142 and 89 households from the rural, urban and mixed municipalities, respectively. In addition 38 respondents participated in 3 focus groups of 10—15 participants each, from three selected barangays.

After adjusting for education and economic indicators logistic regression analysis showed that, children were more likely to be given formula if their mother recalled advertising messages, or a doctor, or mother or relative recommended it. Those using formula were $6.4 \, (1.8-23.1)$ times more likely to stop breastfeeding before 12 months. The focus groups described how television advertisements, doctors and medical representatives enticed them to use formula. We conclude that two factors were strongly associated with the decision to formula feed: self-reported advertising exposure, and physicians' recommendations.

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Introduction

Globally, 10 million children died before the age of 5 years in 2003. Breastfeeding was the most effective intervention which could prevent 1.3 million deaths (Jones, Steketee, Black, Bhutta, & Morris, 2003). A WHO pooled analysis reported not breastfeeding was associated with a 5.8 times increased risk of all-cause mortality in the first two months of life and remained elevated into the second year. Non-breastfed under-six month old Brazilian infants had 14 times greater risk of dying from diarrhea and 3.6 times from pneumonia compared to those exclusively breastfed (PAHO, 2002). Even U.S. breastfed children had 21–24% fewer deaths compared to those not breastfed (Chen & Rogan, 2004). Many studies also show

an increased risk of illness associated with formula feeding (PAHO, 2002). Enterobacter sakazakii, a bacteria known to be harmful to pre-term infants, sometimes contaminates infant formula during manufacturing (FAO, WHO, 2004).

The Philippines, with 82,000 annual deaths, is one of 42 countries accounting for 90% of under-five year old deaths globally (Black, Morris, & Bryce, 2003). Only 16% of 4–5 month old Filipinos were breastfed exclusively while 30% formula fed, up 6% in 5 years (NSO, 2003, 2008).

Research shows that factors influencing the decision to breast-feed include: infant weight (Bautista, 1997), breast milk as the first feed (Sachdev & Mehrptra, 1995), frequency of crying (Karacam, 2008), mother's educational level (Rasheed, Frongillo, Devine, Alam, & Rasmussen, 2009), income level (Arango, 1984) and employment (Rasheed et al., 2009).

Mothers tend to breastfeed when given accurate information (Dulon, Kersting, & Bender, 2003; Horton et al., 1996; Susin et al., 1999), through media campaigns (McDivitt, Zimicki, Homik, &

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Abulaban, 1993), and social (Bryant, 1982) and medical professional support (Abada, Trovato, & Lalu, 2001). However, in environments where women are exposed to social, economic and cultural influences inimical to breastfeeding, they tend to prematurely stop breastfeeding (WHO, 1989). Breastfeeding "educational materials" produced by infant formula manufacturers (Shealy, Li, Benton-Davis, & Grummer-Strawn, 2005) and formula sample distribution were found to negatively impact breastfeeding (Howard et al., 2000). Television advertisements, doctors and relatives also influence the decision to use formula (Fidler & Costello, 1995; Suleiman, 2001). However, a Philippine study reported a minor impact of formula sample distribution and advertising on feeding decisions (Stewart et al., 1991).

The Philippines provides an ideal setting to study the effect of marketing on infant feeding practice with its aggressive industry practices (Raya, 2008) and rising formula usage. According to Euromonitor (2008), "Filipino Milk Formula Market Grows Unimpeded". More than US\$ 100 million was spent on advertising breast milk substitutes in half of 2006 (Conde, 2007).

The present study examines factors influencing decisions to formula feed infants, including mothers' recall of advertising messages, health professionals' recommendations, personal sales representation and other information sources in purposively selected disadvantaged communities in the Philippines.

Methods

We conducted a household survey in a sample of disadvantaged rural and urban barangays (communities) and then conducted focus groups to examine factors influencing decisions to formula feed infants.

Survey tool and implementation

Questions related to feeding and marketing were added to an E-Net (a network of educational NGOs) educational questionnaire conducted in Filipino. E-Net developed and pre-tested the 30-min educational survey to determine the basic household profile, housing and amenities, employment status, education profile, reasons for not attending school and school expenses in seven municipalities and one city where they work. The marketing questions were developed in June 2005, pre-tested and finalized in April 2006. Community workers were trained using a standard enumerators' manual including field-testing. E-Net supervised the interview. The survey was conducted April to December 2006.

Of the seven E-net municipalities, three were selected to represent varying population densities; Toboso (rural), Murcia (urbanizing wealthier), and Sariaya (rural and urban mix). Barangay selection was the same used for the overall E-net survey. These three municipalities had 75 barangays which were categorized into proximity strata (within, near or far from the town center). Of these, 16 were randomly selected within proximity strata. All households with children <24 months in the selected barangays were surveyed with the marketing questionnaire. Only mothers were interviewed.

Chi-square and *t*-tests were used to measure differences in categorical and continuous variables. Logistic regression was used to calculate adjusted odds ratios for formula use relative to breastfeeding. STATA 10 (STATA Corporation, TX, USA) was used for data analysis.

Most variables were defined using a standardized tool (MIMAP, 2004). Houses with light house roofing materials, including bamboo, nipa and salvaged/makeshift materials, are found among poor families (NSO 2008). Light roofing materials were used as a proxy of low socio-economic status (SES). Formula use included any formula regardless of addition of other foods, liquids or breastfeeding.

The predictor variables and corresponding questions used to define them are as follows: 1) Recalled Advertisement: "In the past six months, have you ever seen or heard any advertisement for Formula Milk?" 2) Advertising message: "Can you recall the messages or information given by the advertisement?" 3) Primary source of advertising message promotion was the first answer given to the question: "Where did you see or hear the advertisement for Formula Milk?" They were then asked, "Where else did you see ...?" until the respondent had no more answers. 4) Source recommending use of infant formula: "Who recommended formula to you?" For each question respondents gave unaided responses which were classified according to predetermined categories.

Focus group discussion

The research team of AER, an E-Net member, developed Focus Group Discussion (FGDs) guides based on the survey results to probe for factors that may influence infant feeding choices. Themes explored included: What led you to feed your child as he/she is currently fed? What sources of information have you come across on infant feeding? Can you remember any specific messages? What is special about the messages? In what ways do they appeal to you? What are the reasons you use a given brand of formula milk? How do milk companies promote their products? How do the milk companies influence you? Facilitators were trained to encourage free-flowing dialog by following up on participants' answers.

The FGDs were organized in Toboso (rural) and Sariaya (rural and urban mix) where the survey took place, and Makati City (urban), April—May 2007. Health workers in these localities selected a mixture of 10—15 mothers with children aged under 6 months, 6—12 months and 1—2 years.

Each FGD had handwritten, tape recorded and transcribed notes. Participants were informed the sessions would be tape recorded. The team leader reviewed the transcriptions multiple times and tape recordings at least once. Specific attention was paid to determine that the facilitator did not interrupt the flow of the discussion, nor asked leading questions. Transcripts were coded as follows: all answers were grouped, categorized and labeled according to the aforementioned themes. These were then reviewed to identify common patterns in the responses of the participants. Only those themes reflected in comments made by more than one participant were included in the results.

Ethical approval

All participants were informed about the study, that confidentiality would be maintained and that they could withdraw at any time without explanation. They were given an opportunity to clarify questions. All participants provided informed consent. Department of Health Human Research Ethics Committee granted ethical clearance on October 28, 2005.

Results

Of the total 5219 households, 6.7% (345) had at least one child under 24 months age. Of these, 33.0% (114) were from Toboso, 42.2% (142) from Murcia, and 25.8% (89) from Sariaya. All households with children under 24 months age agreed to participate in the survey. Questions in the survey had no missing data except for ceiling materials which had 9.9% (34) missing observations.

Of the 345 children under 24 months of age, 41.1% (142) were using formula (Table 1). Formula usage was associated with municipality of residence (p < 0.05). Around two-thirds (67.2%) of mothers of formula users had graduated high school versus one-third (32.5%) of those not using formula (p < 0.05). About one-fifth (21.8%) of formula users lived in a house made with light

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