Breast feeding in the Maldives; a survey of current practice and advice given to mothers and growth of the young infant population.

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Background:

Exclusive breastfeeding is the safest, cheapest and healthiest means of feeding the newborn. The WHO recommends exclusive breastfeeding up to the age of 6 months. National data indicate that exclusive breast feeding rates are only 25% at 4-6 months (Ministry of Health, 2006). Child health growth data (2008-2009) collected from the infant growth surveillance program indicate that reductions in growth velocity occurring on a population wide basis begin at 4 months of age. Up to the age of 3 months, with relatively high exclusive breastfeeding rates, children have very rapid growth velocities, faster than the WHO standards. The Ministry of Health (2006) has set a target of achieving 50% exclusive breast feeding rates by 2015. In order to achieve this goal, effective interventions need to be designed and delivered based on a sound understanding of current practices and the factors that will influence health choices.

Growth of infants has been demonstrated to be linked to almost every key indicator of health in a positive way. Mortality rates are lower for children with good nutrition as opposed to undernutrition (not malnutrition), morbidity rates are lower, children go on to perform better at both physical and academic tasks. The importance of growth (in physical, intellectual and emotional spheres) is the first axiom not re-debated in this report. The second axiom is that children exclusively breast fed grow better than those children taking alternatives or supplementary feeds (though this may not be true in highly privileged societies). MDHS data on growth has presented aggregated data as frequencies of markers of undernutrition. This does not enable the reader to consider local growth patterns in a way that focuses the mind on a strategy to prevent the onset of growth faltering (though this is never easy to do outside of the breast feeding age group).

Aim: To document frequency of breast feeding by age of child under 6 months by 2 methods (community based survey of mothers with children under 6 months) and a clinic based questionnaire to all parents of children under 2 years of age. Secondary aim was to document reasons for exclusive breast feeding and for ceasing exclusive breast feeding and to document what advice has been given on breast feeding. Tertiary aim was to document age and gender adjusted weight scores across the first 2 years of life to compare growth velocities by time to identify key growth faltering periods.

Method:

1) Community based survey:All mothers who have delivered between November 1st '2009 – January 31st 2010 will be surveyed using semi-structured interviews. Maldivian nurses, trained in interview techniques, will interview mothers in their own homes. The questionnaire will seek to establish:

- whether the mother is exclusively breast feeding and if not the nature of supplements that are being given.
- What factors have influenced her decisions
- What advice and support she has been given by health professionals
- What other external factors have influenced feeding practices
- The acceptability of nurses delivering health education in the community

This survey will provide baseline data for the development of an intervention study to improve the uptake of exclusive breastfeeding and also to inform characteristics of the intervention to be delivered. In order to improve the external validity of the study data will also be gathered from Addou and Male.

2) Clinic survey: All parents with children under 2 years were asked to recall:

- When the child had feeds other than breast milk?
- At what age did the child have water?
- What age the child had weaning foods?
- Whether they were bottle fed and at what age this was commenced?

Results:

1) Community survey: 38 mothers were interviewed. 100% of mothers were exclusively breast feeding infants up to 1 month of age. At 2 months, 60% of mothers were exclusively breast feeding, at 3 months, 40% and at 4-6 months only 25% of mothers were exclusively breastfeeding.

Those that were using supplementary feeding were using formula milks. The reason most often cited by mothers for adopting the use of formula milks was that they believed these to be more satisfying and better for the baby. Some expressed concern that their babies were not growing fast enough on breast milk and sometimes refused feeds. Two mothers had started to use formula milks because of problems in breastfeeding, including problems of the baby refusing to suck and engorged breasts. One mother felt that she could not ask for help because she feared her question would appear stupid.

The majority of mothers who were interviewed were pimigravidas. None had been given any advice about exclusive breast feeding antenatally and only one had been given advice post-natally by a midwife. No advice was given when women took their infants to the public health clinic for vaccinations. No women had received any home visits from health professionals at home following delivery to support breast feeding. During the conduct of the survey it was noted that three factors appeared to promote exclusive breast feeding. These included:

- close proximity to another mother practicing exclusive breast feeding, mothers also described the exchange of information between peers as a factor in shaping their decision making.
- Health education advice given in earlier pregnancies
- In poorer households the economic advantages of breast feeding were cited as reasons to exclusively breastfeed.

90% of mothers expressed the view that visits from nurses, coming into the community would be welcomed.

2) Clinic based survey

See figure 1. Exclusive breast feeding is usually interrupted by the giving of water, and within the month the giving of additional foods or formula milk. The peak time for parents to discontinue exclusive breast feeding is 3-6 months. Bottle feeding rates rise sharply after 3 months.

3) Growth

150 infants born in 2008 or 2009 had weights recorded and these were recorded in to gender and age adjusted z scores using the UK 1990 standards. This trend compares growth rates of Fuvahmulah children with children from UK (this is only to allow a control comparison). Figure 2 shows these children to be growing fast for the first 3 months of age and then abrupt tail off of growth velocity to be replaced by growth faltering from 3-5 months of age with no sign of subsequent catch up. There may be a further fall off from 18 months but the numbers for comparison are smaller than under a year of age (cohort effect).

Discussion

Differences in data between the two survey types are to be expected, and the truth is somewhere between the two, but the data provide the best contemporaneous picture of young infants in Fuvahmulah in 2010.

It is apparent that at present exclusive breastfeeding up to 6 months occurs in only 25% of mothers and without successful intervention the goal of increasing uptake of exclusive breastfeeding to 50% is unlikely to be achieved. Further examination of exclusive breast feeding rates between 4-6 month shows that at 5 months only 8% of mothers are exclusively breast feeding. The perception that formula milks provide better nutrition is one that is shaping behaviour and where increased economic prosperity occurs women are making a decision based on

what they believe to be best for their baby. Unless there is a change in understanding it is possible that with economic advancement exclusive breastfeeding rates up to 6 months may indeed fall. Although these bottle feeding rates are high, the main reason for discontinuing breast feeding is water. This is a concern as the source of water will not be sterile (or is unlikely to be sterile) and leads to a substitution of calorie containing liquid for a non-calorie containing liquid.

At present there is an absence of health education preparing women for breast feeding or support to maintain breastfeeding. This is despite regular contact with the health service in the antenatal period (3 visits to the obstetrician) and good uptake of immunisations in an outpatient clinic. As all women on the island deliver in the hospital there is also scope to ensure they are given good advice and support prior to discharge. With regard to the timing when most mothers discontinue breast feeding, this appears to be 3-4 months of age (figure 1). Timing a second visit at 3 months to highlight the benefits to the baby at 3 months would be an obvious step to take.

It is apparent that peer support is also a factor that shapes women's practice and highlights the potential influence of effective community engagement to support exclusive breastfeeding. The women's committees of each ward could become involved in the process of promoting exclusive breastfeeding.

Good inter-professional working with agreed goals will be foundational for any intervention strategy to be effective. At present there is a clear gap in the care being given to women and scope to deliver and evaluate a multidimensional intervention to improve the uptake of exclusive breast feeding.

Growth is a complex end-point to many nutritional and health associated factors, with no single factor dictating the final growth at any one time. It is though, given the two previous assumptions (growth is a vital measure of child health and secondly that exclusively breast fed babies under 6 months grow better) important to note the timing of peak growth faltering occurs at 3-4 months of age. During this time most mothers decide to discontinue exclusive breast feeding and rates fall from 70 to 25% (clinic survey) or 60-40% (community survey).

Conclusion

This data provides the "first glimpse" picture of local social epidemiology of infant feeding. It should enable targeted health education for mothers and should be re-audited in 1 year (both growth data and breast feeding data).

Figure 1

Exclusive breast feeding rates by age in months for first 6 months of life and current weaning practices (n=26)

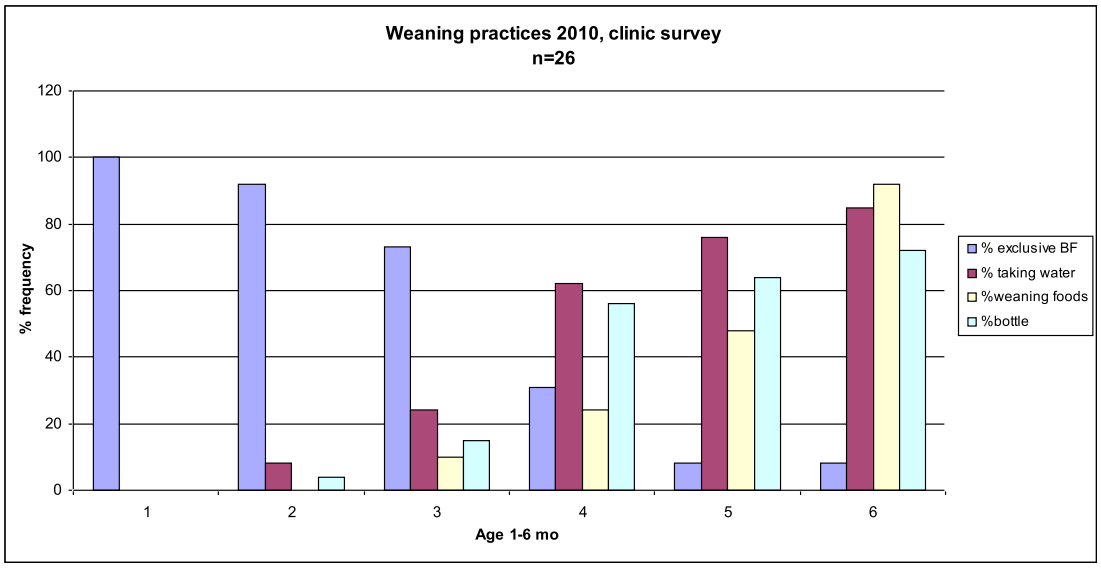

Figure 2

Weight for age z scores by UK 1990 reference standard (n=150)