Knowledge, Attitude and Practice of Birth Spacing among Ghanaian Mothers: Implications for Maternal and Child Nutritional Status

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Abstract: The study investigated the knowledge of Ghanaian mothers on birth spacing, how this knowledge influenced their attitudes and birth spacing practices and possible implications for maternal health and child nutrition. A total of 200 mothers attending antenatal and/or postnatal clinics at a hospital in Accra participated in the study. A structured questionnaire with both open and close ended questions was used to collect information on socio-demographic characteristics of respondents, knowledge on birth spacing, attitudes towards birth spacing and the practices of birth spacing. The results revealed that a greater proportion of women (98%) had heard about birth spacing, however only a few (10%) had in depth knowledge. The top three birth spacing methods known by most respondents were pills (83%), followed by the male or female condom (72%) and abstinence (56%). The study sample used a variety of birth spacing methods with majority using various short-term contraceptives e.g. the pill, while the least used method was Norplant (a long-term contraceptive method). Averagely, 48% of the women spaced their births for one year, 32% for 2 years and 18% for 3-5 years. The desire to have a particular sex, marital status, ageing pressure and the desire to have a new child were some of the factors which influenced the decision of mothers on birth spacing. Literature suggests inter-pregnancy interval influences the nutritional status of mother and child. With 80% of respondents having a birth spacing interval between 1-2 years, it implies that their short birth spacing interval was affecting their nutritional status. It is recommended that women should be targeted for in depth education on birth spacing and maternal health in general and its implications for the nutritional status of both mother and child, in order to provide deeper understanding of the birth spacing concept to a lot more women

Key words: Birth spacing • Knowledge • Practices • Health • Nutrition

INTRODUCTION

One of the many decisions made in the household, which has consequences on family wellbeing, is the timing and spacing of children [1]. The World Health Organization recommends waiting for at least two to three years between births to reduce infant and child mortality and improve maternal health. Studies supported by the United States Agency for International Development in 2002 have suggested that optimal birth spacing of three to five years might be more advantageous. These studies confirm that in less developed countries, if no births occur within thirty-six (36) months of a preceding birth, infant mortality and under five mortality rates would drop by 2% and 35% respectively [2]. According to the Ghana Maternal Health Survey [3], childhood and maternal mortality is strongly associated with variations in birth intervals. Unfortunately, many women in developing countries are only not able to achieve their own reproductive goals but are also falling far short of the three (3) to five (5) years intervals that new evidence suggests are healthiest. A United Nations Development Programme report drawn from studies in the least developed and developing countries in Africa reveals that the practice of family planning is very low and in most of these countries, one out of every four women expresses the desire to avoid pregnancies and use birth spacing methods but they are not able to do so [4].
There are various reasons why time is needed between births. Having children too close together has long been associated with increased risk of various adverse health outcomes, including poor health and mortality for mothers and children. Enough planned time between births increases the chances of a good outcome for the mother and each of her babies. It reduces abortions and unwanted pregnancies and improves children's health, nutrition and development. Mothers with short intervals between their births do not have enough time to recover from the nutritional burden of pregnancy before getting pregnant again while larger intervals allows for repletion or improvement in the nutritional status of mothers before the next conception [5, 6]. Birth spacing also allows the mother to recover physically and emotionally before she becomes pregnant again to face the demands of another pregnancy, birth, breastfeeding and child care [5, 7]. Birth spacing enables the proper planning of family resources for each child by the parents. Closely spaced and frequent births often lead to poverty and overburdened family environments and contribute to poor school performance through malnutrition and the inability of parents to provide attention to each child's needs [8].

According to the Summer 2000 Population Report, children born three to five years after the last birth were about 2.5 times more likely to survive than children born two years or less after the last delivery. Mothers with 27 to 32-month birth intervals were found to be 2.5 times more likely to survive childbirth compared to women with 9 to 14-month birth intervals. Women with optimal birth intervals were more likely to avoid anaemia, fetal growth retardation and premature delivery, which results in low birth weight neonates [9]. Realizing these consequences, promoting family planning programs has long been a central goal around the world to help women achieve their desired birth intervals [10].

As defined by the Population Reference Bureau [11], family planning is the conscious effort of couples to regulate the number and spacing of births (birth intervals) through artificial or natural methods of contraception. Undoubtedly, these family planning programs have improved knowledge about contraceptive methods in Ghana, bringing contraceptive prevalence rate to be the second highest in West Africa (behind Cape Verde) at 18% [12]. This percentage is low. The Ghana Demographic Health Survey [13] revealed high knowledge (93%) of family planning among married women. Out of this percentage, only 22% used family planning methods to plan or space birth. Families lack information about risks and benefits associated with the spacing of births, which can eliminate the fear of contraceptive use, an obstacle in achieving healthy birth intervals [14]. This information gap, coupled with negative demographic, social, economic and cultural pressures to space births in Ghana, is thus a major impediment and obstacle in the achievement of family planning goals [15]. This poses a huge challenge to meeting the fourth and fifth Millennium Development Goal to reduce maternal mortality and improve child health by 2015 [16]. This poor reproductive health situation provided a rationale for this research to focus on the knowledge of Ghanaian mothers on birth spacing, their attitudes towards birth spacing and birth spacing practices and its implications for improvement of the nutritional status of mother and child.

Findings of the study will provide information on the current level of knowledge on birth spacing among Ghanaian mothers and their accompanying practices. Such information will be useful to extension agents from both governmental and non-governmental organizations in their outreach programs on birth spacing and maternal and health issues in general. The findings will also provide policy makers with information that will help in their formulation of health care policies for mothers and children to help reduce maternal and child mortality in the country and help meet the fourth and fifth Millennium Development Goals and to improve the nutritional status of mothers and children.

MATERIALS AND METHODS

Study Design and Location: The study, which was a cross sectional survey, was conducted at the Reproductive and Child Health (RCH) and Maternity Units of the Achimota Hospital of the Greater Accra Region of Ghana. The location was chosen because it gave the researchers access to mothers attending both antenatal and postnatal services and it also allowed the researchers to gain varied opinions about the issue under study from respondents with different demographic, cultural, social and economic backgrounds.

Target Population, Sample and Sampling Procedure: The target population was mothers who had at least one (1) live birth with a subsequent pregnancy or two (2) or more live births with or without subsequent pregnancy (ies). The choice of this population was to enable the researchers have a measure of interval for birth spacing for each respondent. Averagely, about two hundred and fifty (250) mothers reported at the RCH and Maternity
Table 1: Variables used to assess knowledge and attitude of respondents

Knowledge and Attitude Assessment

Knowledge
a) Have you heard of the term birth spacing?
b) Is birth spacing a good practice?
c) How long do you think that a woman should wait between the birth of one child and the other?
d) Do you know of any birth spacing method?
e) Mention any birth spacing method that you know.
f) Source of information on birth spacing

Attitude
a) Did you plan to space your children?
b) Do you ever talk about how to space your children with your husband
c) If you want to have any more children, how soon do you want to have them?
d) Is it necessary to space birth if you have the resources to take care of your children

RESULTS AND DISCUSSIONS

Socio-Demographic Characteristics of Respondents: The ages of the respondents ranged between 15 and 40 years. Majority (74%) were between 20 and 35 years. Ninety three percent (93%) had had some form of education, with 76% having primary to secondary education and 17% having tertiary education. Most of the respondents (74%) were Christians of different denominational background, 12% were Muslims and the remaining (14%) were traditionalists. In terms of marital status, 64.3% of the respondents were married, 8% and 27.7% were single and co-habiting respectively. A high percentage (91%) of the respondents was employed, either in the formal (34%) or informal (57%) sector whiles 9% were unemployed. Majority (90%) of the respondents had two to four children. Most (78.5%) of the respondents had their first birth between the ages 20 and 24 years.

Instrument and Procedure for Data Collection: An introductory letter was obtained from the Family and Consumer Sciences Department, University of Ghana and submitted to the hospital authorities for permission to conduct the experiment in their establishment. Upon acceptance, respondents were identified with the help of the health personnel. The respondents were educated on the purpose of the study. They were further assured of privacy and confidentiality concerning their responses to the questionnaire and verbal consents were obtained from those willing to participate in the study.

A pretested structured questionnaire comprising both close and open-ended questions was used to collect information on the respondents’ background characteristics, knowledge on birth spacing, attitudes and practices of birth spacing. The knowledge of respondents on birth spacing was assessed using six (6) birth spacing related questions while attitude was assessed using four (4) attitude related questions (Table 1). The questionnaire was administered to the respondents by the researchers in any agreed language convenient to both the researcher and respondent. Data collected were analyzed using the Statistical Package for Social Sciences (SPSS) Software (version 17). The findings were discussed in line with their implications on maternal and child nutrition. A limitation of the study was that self report was used in assessing respondents’ knowledge about the nutritional implications of birth spacing. Actual nutritional status of mothers and child were not assessed.
Table 2: Distribution of respondents’ knowledge on birth spacing.

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever heard of birth spacing</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>98.0</td>
</tr>
<tr>
<td>No</td>
<td>2.0</td>
</tr>
<tr>
<td>Birth spacing being a good practice</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92.0</td>
</tr>
<tr>
<td>No</td>
<td>2.0</td>
</tr>
<tr>
<td>No idea</td>
<td>6.0</td>
</tr>
<tr>
<td>Knowledge of birth spacing methods</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96.0</td>
</tr>
<tr>
<td>No</td>
<td>4.0</td>
</tr>
<tr>
<td>Sources of information</td>
<td></td>
</tr>
<tr>
<td>Health Facilities</td>
<td>38.9</td>
</tr>
<tr>
<td>Mass media</td>
<td>32.6</td>
</tr>
<tr>
<td>Family and friends</td>
<td>28.5</td>
</tr>
</tbody>
</table>

Table 3: Knowledge and use of birth spacing methods by respondents

<table>
<thead>
<tr>
<th>Birth Spacing</th>
<th>*Knowledge (%)</th>
<th>Use (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pills</td>
<td>83</td>
<td>19</td>
</tr>
<tr>
<td>Male/Female Condom</td>
<td>72</td>
<td>11</td>
</tr>
<tr>
<td>Abstinence</td>
<td>56</td>
<td>-</td>
</tr>
<tr>
<td>Injectibles</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>IUD</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Safe Period/ Calendar</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Exclusive Breastfeeding</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Abortion</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Norplant</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

* Multiple responses observed

Birth Spacing Methods Known and Used by Respondents:
Knowledge about birth spacing and birth spacing methods used by respondents are presented in Table 3. The findings suggest that the level of knowledge about birth spacing was high while actual practice was low. Respondents were aware of a variety of contraceptives with the main ones being short term methods of contraception but then the rate of use of these methods was very low. When asked if they had heard of or knew of any birth spacing methods, 96% said they knew of some birth spacing methods. The major birth spacing methods known by the respondents were pills (83%) and male or female condom (72%).

Of the ever used birth spacing methods, pills was the most frequently used (18.7%), followed by condom use (11.3%), injectibles (8%), intrauterine device (IUD) (5%) and safe period (5%). Withdrawal (2%), norplant (1%) and other methods (1%) were the least used. This finding somehow agrees with report by Population Reference Bureau [11] which revealed that in West Africa, hormonal contraceptives, including the pill and injections are the most commonly used methods. The findings of this study contradict report from a survey conducted on married women in Ghana which reported that the injectibles was used by 39%, followed by the pill (24%) in Ghana [21]. The findings also contradict those of Yount et al. [22] who reported condom use as the most appreciable contraceptive measure among masses in India. Chaney [23] also reported of the popularity of condoms as the most appreciable contraceptive measure among masses in Brazil. Apart from condoms, pills were the next commonly used contraceptives.

Abortion, which is not a family planning method, unfortunately was used by 8% of the sample as a birth spacing method, confirming Tinker and Koblinsky [24] assertion that some women use abortions as a means of spacing birth. There would be the need for extensive education to change this erroneous impression and practice. Respondents also did not use the natural methods of birth spacing which included abstinence and exclusive breastfeeding. This they explained was because they were not sure of the effectiveness of the method preventing pregnancy.

Respondents’ Average Birth Spacing Intervals, Views and Practices: Respondents views about birth spacing and average birth spacing interval practiced are presented in Figure 1. The actual birth intervals of respondents were measured using birth history information on birth order, dates of birth and survival status of each child. The intervals were estimated by subtracting the date of birth of the lower order from the higher birth order.
In terms of their views on the appropriate birth spacing interval, 55% indicated that they thought spacing births between 1-2 years was appropriate. This suggests that majority of respondents were unaware of the appropriate / approved birth interval. It was therefore not surprising that 80% actually had birth intervals between 1-2 years. This confirms GDHS [21] report that women have unmet needs for family planning and birth spacing in Ghana. A minority (45%) knew about and 20% practiced the 3-5 years birth interval. This presupposes that education needs to be intensified to ensure that more mothers accept and practice spacing births using the current approved birth spacing interval.

Respondents’ Knowledge about Need/reasons for Birth Spacing: Some of the factors that influenced the respondents’ decisions on birth spacing choices included the desire to have a particular sex (gender of the child), the respondents’ marital status, ageing pressure, the desire to have a new child, financial constraints and the desire to pursue personal goals, among other factors.

Various reasons were given by the respondents as to why mothers need to space their birth. Notable among these reasons were the fact that birth spacing allows mothers to have enough time to cater for their previous children; helps avoid pressure on family income and resources; helps mothers to regain strength in order to give birth to healthy children and enables the mother to develop her career. These reasons indicate that the women have adequate knowledge on advantages of birth spacing.

Current research suggests that children born 3 years or more after a previous birth are healthier at birth and also more likely to survive infancy and childhood through age five, implying that more children could survive each year if women spaced their births at least three years apart. A short birth interval may compromise the care received by the child. For example, a new pregnancy may prompt weaning of the current child. In addition, the presence of several young children in the household has been reported to increase the risk of infections [25]. Studies on child nutrition outcomes have reported a greater risk of malnutrition with a shorter birth interval [2, 26, 27]. Women with optimal birth intervals are more likely to avoid anaemia, fetal growth retardation and premature delivery, which results in low birth weight neonates [6, 9].

Respondents’ Attitudes Towards Birth Spacing

Readiness for Child Birth at the Time of Pregnancy: The research sought to find out how ready respondents were on the average with each pregnancy they had had. Fifty four percent of the respondents indicated that did not plan to space their births and therefore were not ready for child birth. Forty six percent (46%) planned to space their births. These results are in accordance with the GDHS [21] which indicated that most Ghanaian women were not prepared at the time of pregnancies. Some reasons given by respondents for their unreadiness for pregnancies included the fact that they did not have good financial security; were not married; the pregnancy was accidental; as well as pressure from family and friends.

Partners’ Involvement in Birth Spacing: Only a third (34%) of the respondents engaged their partners in issues concerning the spacing of their children. Reasons they gave for doing so were that they felt their partners were financially responsible for the children; took final decisions in the home; were the heads of the home and as such it was prudent to involve them in such issues. For the 66% who did not involve their partners, some of the reasons they gave included the fact that they were shy and did not know how to initiate conversations revolving
around that issue; some partners were not bothered about such issues; did not know how their partners were going to respond so they refrain from discussing issues about birth spacing with them. A similar observation of low involvement of men in family planning was made in Nigeria by Olugbenga-Bello et al. [28]. Out of the 362 men studied, only 29% followed their wives to the family planning clinics. The lack of male involvement in family could be a major obstacle to a rapid decline in fertility in sub-saharan Africa taking into consideration the amount of power men have as decision makers in the home and society. Since men are primary decision makers in most families in developing countries, their involvement in family planning issues could enhance maternal nutrition and wellbeing [29, 30, 31]. The health and nutritional status of the mother affects her ability to care for her children [32]. According to Allen et al. [33] maternal weight and dietary factors are associated with infant behavioural variables especially habituation (a measure of early information processing) than socio-cultural factors in Mexico. There is therefore the need to improve male involvement in maternal health care issues through education and awareness creation.

Respondents Desire to Have More Children: When asked whether they would want to have any more children than they had, 28% of respondents stated that they wanted more children while 72% did not desire to have any more children. Reasons cited by respondents as to why they did not want to have any more children included financial burdens encountered in catering for children; whiles some said they were content with the number of children they had. For the respondents who expressed their desire to have more children, 59% indicated that they would prefer to wait for 3-5 years, 26% for 2 years, 13% for 1 year and 2% for more than 5 years.

Need to Space Birth with Available Resources: When asked whether there was the need to space birth even if one had all the needed resources, 54% of the respondents indicated that they thought it was necessary to space birth despite the availability of resources. However, 46% did not think it was necessary to practice birth spacing if one had all the resources to cater for their children. To them, having resources is all that matters and that once a person has resources, she can have as many children as she wants and must not bother about spacing. This finding confirmed a research by Kirk et al. [34] in Europe which revealed that most women around the globe associated the need to space birth with available resources.

Implications for Nutritional Status: Literature suggests that birth spacing influences the nutritional status of mother and child [5, 6]. Lactation seems to reduce the nutritional reserves of mothers, so longer inter-pregnancy intervals allow for an increase in nutritional reserves before the next conception [35]. With most respondents having birth spacing intervals of 1-2 years, it presupposes that they are not allowing their nutritional reserves be restored adequately before their next pregnancy. This could be detrimental to the health of the mother and child. The stage of inter-pregnancy interval (i.e. whether pregnancy occurs during the period of lactation or when the mother is neither lactating nor pregnant) also has different effects on the nutritional status of the mother and child [6]. The stage affects the mother’s nutritional status which ultimately affects the child’s nutritional status. Studies in developing countries also show that longer birth intervals are associated with lower risk of child malnutrition in some populations [6]. But then there was little evidence to suggest that there was a significant relationship between length of birth spacing and good nutritional status of children [6].

It must however be noted that the nutritional status is not assessed only using the birth intervals but other extraneous variable could account for or are used to assess the maternal and child nutritional status. These include: the mother’s initial body mass index [36-38], the mothers dietary adequacy and physical activity [6] and dietary adequacy during pregnancy [39].

CONCLUSION

Based on the findings of the study, it is concluded that a greater proportion of Ghanaian mothers are aware of the issue of birth spacing and the different types of birth spacing methods. However, only a few practiced the recommended birth interval (3-5years) that new evidence suggests are healthiest. This has implications for maternal health and child nutrition. It is recommended that in depth education on the benefits of appropriate birth spacing be included in outreach programs on maternal and child health in general. This would provide a deeper understanding of the birth spacing concept to a lot more women and also help meet the fourth and fifth Millennium Development Goals. There is also the need to encourage women to involve their male partners in birth spacing programs as they play a key role in the realization of adequate birth spacing among women. It is also recommended that further studies be conducted to assess the effect of birth spacing on mother and child’s actual nutritional status. To assess children nutritional status,
their anthropometric status, anemia or iron status and other micronutrient status could be assessed. To assess the nutritional status of mothers, their body Mass Index (BMI), anemia or iron status and other measure of micronutrient status (e.g. Vitamin A) could be assessed in relation to the inter-pregnancy interval.

REFERENCES