Problematic of the exclusive maternal nursing of the infants in Kisangani city, DR Congo

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ABSTRACT:
This transverse descriptive survey done on June 2017 in the Kisangani city in Democratic Republic of the Congo aimed to determine the level of the practice of exclusive maternal nursing during the first six months of life of infants and the factors that hinder this practice. A simple random sampling method permits to obtain a sample of 550 nursing mothers, among which 477 matched inclusion and non-inclusion criteria. The results of this investigation shows that the rate of exclusive maternal nursing during the first six months of infant’s life in the city of Kisangani is of 51.4%. The infants nursed exclusively to the breast since their births until six months presented only 20.8% of case of the infantile morbidities when that non submitted to this practice showed 78.4 % of infant suffering of infantile pathologies. The socio-professional categories (work, illnesses and studies) are the only factor that had significantly influenced the use the exclusive maternal nursing practice. Majority of nursing mothers are informed for this practice when taking antenatal care at the health center or the hospital. The exclusive breastfeeding practice have to be recommended and its promotion have to be sufficiently done in media.

Keyword: maternal nursing, food of infants, morbidity, Kisangani, Democratic Republic of the Congo.

INTRODUCTION

The exclusive maternal nursing is a strategy of struggle against the morbidity and the mortality of the children of less than six months and perfectly answers the needs in nutriments and in water of infants. In general, this strategy gives to the infants the advantages to the survival, the growth and the development [1, 2].

Several studies confirm that the maternal milk remains an ideal food for the infants during the first months of their life. Its advantages are considerable, as complete, balanced, economic, specific and sterile food. In addition, it is given at an ideal temperature and bound directly the mom breast to the child’s mouth [1,3,4].

The antibodies of the family of the immunoglobulines help to protect the child’s organism against different viral aggressions to which the body is confronted during the first months. These antibodies also help in the development of the immune system and its backing. The maternal milk contains some immune elements named “mucines” that contains a lot of proteins and of the ”carbon hydrates” and these are the substances that adhere to the bacteria and the viruses and eliminate it completely without side effects, contrary to the medicines [5].

Several researches also affirmed that the duration of the complete digestion of the maternal milk is of 15 minutes whereas the one of the cow milk is longer than 60 minutes. It contributes to the save of the time and the effort to the child’s organism for his growth [3-6]. The maternal milk helps towards the correct development of the digestive system [5]. The maternal milk gives to the child a psychic balance and help to the sleep, it is the best tranquilizer for the child [7]. The maternal milk decreases the risk of allergy for the child and can even warn some.

Studies done in 30 countries proved that the mother who gives the breast to his child is less exposed to the breast cancer [8]. The maternal nursing encourages the return to the normal size of the vagina after it dilated itself twenty times during the childbirth. Thus, it protects the mother against the cancer of the vagina and of the endometrium [5]. The nursing helps the new mother to lose the weight and protect her from the obesity [9]. It is also a natural tranquilizer for the mother and for the child.

The precocious introduction of complement food is at the origin of the increase of the risk of the diseases like diarrhea [10, 11, 12], a shortening of the length of the nursing [12, 13] and an increase of four times of the risk to be hospitalized for a sharp respiratory infection [14]. To limit these risks, the WHO and the UNICEF recommend since May 2001, to initiate the maternal nursing in the first hour according to the childbirth, to opt for an exclusive maternal nursing until six months and to pursue the nursing until two years or more[15]. It can be completed by the progressive introduction of an adequate, sure food, suitable for age, answering the infant’s complementary needs from six months [16].

The maternal milk provides to infants sufficient quantity of water they need if the nursing is exclusive and non-limited because it is composed of 88% of water and a weak salt content. Even though the infant receives little quantity of water in the first thick and sallow milk (colostrum), no additional water is necessary because the infant is born with the supplementary water. Indeed, the infant doesn’t need as much water as a more aged child or an adult.

Giving water before the age of six months to an infant can entail serious risks for infant’s health [14-16]. If the concept of exclusive maternal nursing until six months imposes itself logically, it comes again up against numerous sociocultural gates in the developing countries [14, 17].

According to the Demographic Investigation and Health (DIH 2013-2014) and the Investigation by clusters to Informers Multiples (I.I.M 2010), between 2010 and 2013 the practice of the exclusive maternal nursing until six months passed from 24 to 48% in Democratic Republic of the Congo ( DRC) [18]. The precarious situation of the life conditions in the households, the occupations of the nursing women, the multiplicity of advertisements of the artificial milkly products and numerous sociocultural gates in the city of Kisangani, province of the Tshopo in DRC conducted as to undertake this survey.

The aim of our investigation is to actualize the key indicators of the exclusive maternal nursing in the city of Kisangani in order
to make available a data bank that can be used by health authorities to give the most suitable answer in the struggle of the morbidity and mortality reduction of the infants under six months of age.

**STUDY AREA AND METHOD**

**Study area**
The investigation was conducted in June 2017 in Kisangani city. Kisangani is the main town of the Tshopo province in the north-east of DRC. This survey was conducted in the municipalities of Tshopo and Kabondo, two of the five municipalities of Kisangani city.

![Fig. 1: Location of Kabondo and Tshopo municipalities, Kisangani city, DRC](image)

**Size of the sampling**
The investigation has been achieved according to a plan of sampling to three degrees: at the first degree, the municipality, at the second degree, the avenues and at the third degree, the households. And the criteria of inclusion of the investigation were defined by all nursing mothers of more than six months and, that doesn't present any pathology. And those of non-inclusion by a nursing mother of less than six months, having refused to participate to the investigation or absent at the time of the investigation. In this transverse descriptive survey, the number of sample of the investigation is determined by the formula of the centered reduced normal law:

\[ \eta \geq Z^2 \rho Q \delta^2 \]

where:
- \( \eta \) = minimal size of the sample;
- \( Z \) = standard score or z-score;
- \( \rho \) = prevalence;
- \( Q \) = complement of \( \rho \);
- \( \delta \) = error margin to 5%

The prevalence of the exclusive maternal nursing of the infants of six months in DRC, according to I.I.M 2010 being of 48%, either 0.48 ; so therefore, with a level of confidence fixed to 95%, an error level of 5% and a prevalence of the valued exclusive maternal nursing to 48%, while considering the criteria of income of 1 dollar per day and per person; the size of our sample is of:

\[ \eta \geq 1.96^2 \times 0.48 \times 0.52 / 0.05^2 \]

Thus
\[ \eta \geq 384 \]

The size of minimum sample of our investigation is of 400 nursing mothers.

So for this work, a sample of 550 nursing mothers was retained. But, considering the chosen sample, only 492 nursing mothers had answered to the inclusion criteria of the investigation of which 15 were eliminated by the criteria of non-inclusion (seven gave incomplete answers and eight nursing mothers were absent at the time of the investigation).

The simple random sampling method permit us to determine our sample, by the successive random drawing of two municipalities, 22 avenues and 550 parcels where live 550 nursing mothers. This technique allowed us to analyze the results according to different variables of the sample.

We conducted a cluster drawing technique at three degrees:
- The first degree: we drawn by lot two municipalities;
- The second degree: we drawn by lot of 11 avenues in every municipality;
- The third degree: we chose systematically 25 nursing mothers living in 25 parcels in every avenue (systematic sampling).

**Type of survey**
Our survey is transverse descriptive

**Parameters of survey**
This survey exploited following parameters:
- Age of the mother
- Study level of the mother
- Profession of the mother
- Matrimonial statute
- Sex of the child
- Number of order of motherhood
- First breast-feeding time after childbirth
- Months put to the exclusive maternal nursing
- Type of supplement drinks to the maternal milk
- Place of information of the practice of the exclusive maternal nursing
- Knowledge of the exclusive maternal nursing

**Analysis**
The data of the investigation have been seized on the software Epi è info version 3.5 and their treatments present themselves as the pictures in value of frequency, percentage and average.

**RESULTS AND DISCUSSION**

**Results**
Data evaluation was made according to three levels:
- The profile of the nursing mothers.
- The profile of the infants.
- The knowledge of the food of the infants

**Profile of the nursing mothers**
Figure 1 gives the distribution of the nursing mothers according to the age

![Figure 1:Distribution of the nursing mother according to the age](image)

The age of our population varies 12 to 42 years with an average of age of 25 years, the mothers of interval of age between 26 to 32 years represent the highest proportion (41.1%) when the mothers of age between 33 and 42 are the least represented with 9%.
According to the figure 2 the majority of mothers subjected to the investigation was of secondary school level (48.6 %) and only 8% of nursing mothers had higher school level.

Table 1 give the distribution of the nursing mothers according to the number of motherhood

Table 1: Distribution of the nursing mothers according to the number of motherhood

<table>
<thead>
<tr>
<th>Number of motherhood</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primiparous</td>
<td>141</td>
<td>29.6</td>
</tr>
<tr>
<td>Multiparous*</td>
<td>257</td>
<td>53.9</td>
</tr>
<tr>
<td>Grand multiparous**</td>
<td>79</td>
<td>16.5</td>
</tr>
<tr>
<td>Total</td>
<td>477</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* 2 to 3 motherhoods * * more than 3 motherhoods

As it can be noticed from the table 1, more the half of the moms were multiparous (53.9%) and only 16.5% were the grand multiparous.

Figure 3 gives the distribution of the nursing mothers according to the matrimonial statute

Figure 3: Distribution of the nursing mothers according to the matrimonial statute

The majority (56.6%) of nursing mothers interviewed are married. It can be noticed that one on four (25%) of nursing mothers are singles.

Table 2 shows that the class of infants of six months was the most represented with 40.5% and that of 11 months was the less represented with only 3.1 %

Profile of the infants

Figure 5 gives the distribution of the infants according to the sex

On 477 infants under our investigation, 262 infants (54.9%) are male and 215 (45,1%) infants are of feminine sex

Table 2: Distribution of the infants investigated according to their age

<table>
<thead>
<tr>
<th>Age (months)</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>193</td>
<td>40.5</td>
</tr>
<tr>
<td>7</td>
<td>116</td>
<td>24.3</td>
</tr>
<tr>
<td>8</td>
<td>75</td>
<td>15.7</td>
</tr>
<tr>
<td>9</td>
<td>49</td>
<td>10.3</td>
</tr>
<tr>
<td>10</td>
<td>29</td>
<td>6.1</td>
</tr>
<tr>
<td>11</td>
<td>15</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>477</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 6: Distribution of the infants according to the practice of the exclusive maternal nursing

Legend :

Inf.Mat.Nur: Number of infants exclusively nursed to the breast

Globally on 477 nursing mothers interviewed, 245 ( 51.4%) of them indicates that their infants were nursed exclusively to the breast in the first six months of their births. The figure compares the number of infants exclusively nursed to the breast to the total number of infants by category (period of age) of infants.
The majority of the moms had given the breast to their child to the demand (51.4%). Only a minority makes it according to a scheduling of the hours of the feedings (11.7%) and 36.9% give the mixed nursing.

**The knowledge of the infants’ foods**

Table 3 shows that one on three mothers in Kisangani city practicing the resumption of work (32.3%) and of reproductive pathologies attacks.

Figure 7: Number of infants according to the attack of the illnesses

This figure indicates that 245 infants nursed exclusively to the breast until sixth month, only 50 (20.4%) were subjected to illness attack but for 232 non nursed exclusively to the breast for the first six months, 182 or 78.4% have suffered infantile pathologies attacks.

Table 3 indicates a need of the mixed nursing.

The average of age of the nursing moms interviewed in this investigation is of 25 years. The young nursing mothers of interval of ages between 12 to 18 years represent 15.3% of moms investigated. This indicate a need of reproductive health and family planning education.

Taking into account the education level, the majority of nursing mothers has at least the secondary school level (48.6% for secondary school and 8.0% for graduate level). This category of mothers has difficulties to practice the exclusive breast-feeding because of their professional engagements. For the mothers who have never been at school or that have been only on primary school, their socio-economic situation is not good, they are obliged in the majority of cases, to spend their time selling in the market or doing agricultural activities. This category of mothers thinks that maternal milk is insufficient, so they complete it in giving some water, juice or soup to their infants. This habit is not good because it is the basis of several infantile diseases [1,3,5,11].

The majority of nursing mothers are married (56.6%), they have to cope with household expenses and seek food despite the difficulties. The single nursing mothers represent 43.4% of the interviewees, they are the chief of their household and in this case, the load is even greater.

The mothers who do not have a liberal job have difficulties in practicing exclusive breastfeeding because of their professional engagements. These mothers know the importance of exclusive breastfeeding for the six first months but they are obliged to spend more time outside of the household and cannot feed their infants during the day.

**Profile of the infants**

The results of this survey showed that 477 infants under-investigation, 262 infants or 54.9%, are male and 215 infants or...
45.1% are female. And the mothers who nursed their infants exclusively with the breast for the six first months present a number of 245 or 51.4%. These infants presented a good growth and an ideal physical development. Indeed, on 245 infants exclusively nursed to the breast for six first months (Fig.7) only 50 cases of infantile morbidity were recorded representing 20.4%. But on 232 infants non exclusively nursed to the breast for the six first months, 182 of them were submitted to infantile diseases attacks or 78.4% of case of infantile morbidity. This indicates the importance of exclusive breastfeeding and confirms previous works [4,5,8,11-14,17].

Knowledge of the food of the babies

The majority of nursing mothers (81.1%) is informed of the practice of the exclusive maternal nursing of the infants for the first six months (Tab.3). They are informed mainly during the antenatal care in the hospital or in the center of health; and in the community, by municipal health services. The Medias and the churches are also giving the same information but they do not have a good impact on the nursing mothers. It was also shown (Tab.4) that 32.3% of nursing mothers didn’t practice the exclusive maternal nursing for the six first months due to the reason of work. In fact, the Congolese legislation give not more than three months for maternity leave, so mother have to let their infants at during the day, it is than no possible to practice the exclusive breastfeeding [18]. Some others reason can also conduct mothers to stop exclusive breastfeeding, this include the illness of the child or the mother (25.4%), the belief or custom (24.6%). Indeed, some customs push mothers to give the infant during the six first months of birth. Obtained results also show that 51.4% of nursing moms had given the breast to their infants only on demand.

CONCLUSION

This survey shows that the rate of exclusive maternal nursing until at the age of six months for the infants living in the municipalities of the Tshopo and Kabondo in the city of Kisangani was estimated to 51.4%. The average age of nursing mothers is of 25 years. The majority of mothers interviewed had at least a secondary school level (56.6%). The half of nursing mothers is multiparous (53.9%). Those that are married represent (56.6%) and the working mothers, 35.2%. When infants are nursed exclusively to the breast, only 20.4% are subject to infantile morbidity. Majority of nursing mothers are informed of exclusive maternal nursing at the hospital when having antenatal care.

It can be concluded that the socio-professional factors significantly influence the practice of exclusive maternal nursing during the first six months of infant's birth (work, illnesses and studies). And that, this practice have a significant impact on the infant health. It is important that media can increase mothers' awareness of the practice of exclusive breastfeeding.

REFERENCES

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