

DEMOGRAPHIC-ANAMNESTIC PARAMETERS WHICH AFFECT IMPLEMENTATION OF BABY FRIENDLY PROGRAMME

Momcilo Djordjevic¹, Gordana Djordjevic² and Bozidar Jovanovic¹

Various studies and extensive researches, particularly during recent years, on the advantages of breastfeeding and the use of breast milk in infant's nourishment, have stressed its immeasurable benefit to mothers, infants, family and society.

The objective of the research was to ascertain demographic and anamnestic factors affecting the implementation of the baby friendly programme.

The study was undertaken at OGC CC Kragujevac and based on data from 432 women.

The mean age of the examinees was 25,9 years and they were 6 months younger than the corresponding examinees from similar world researches. In most cases, the examinees were from urban areas and lived in bigger families, which did not affect the implementation of the programme. With equal probability, it was the first or second pregnancy and in most cases, there were no hospitalizations during the pregnancy in both tested groups. Medications are more often used during the implementation of the baby friendly programme. The reason for positive influence of the use of medications during the pregnancy on implementation of the baby friendly programme probably lies in better supervision of the pregnancy. The gestation age did not influence the selection into the programme.

By means of higher level of supervision and by the use of medications during pregnancy, we can positively influence mother's and infant's starting with the baby friendly programme implementation. *Acta Medica Medianae 2005;44(4): 49 – 53.*

Key words: *baby friendly programme, demography, anamnestic parameters*

Obstetrics and Gynecology Clinic, Clinical Center "Kragujevac",
Kragujevac¹
Institute of Public Health, Kragujevac²

Correspondence to: Momcilo Djordjevic
OGC CC "Kragujevac"
30 Zmaj Jovina Street
34000 Kragujevac, Serbia and Montenegro
Phone: 034/ 345-230

Introduction

Breastfeeding is the most optimal way of nourishing, improving an infant's health, growth and development. Breast milk is more valuable in comparison to any other product (1,2). It is ideally adapted for the infant's needs, contains a balanced ratio of nutritious substances and ingredients necessary for the protection from infections.

In the recent years, the world's movement for the breastfeeding promotion has been gradually strengthening (3). Many researches have shown not only the effects on decreasing of morbidity, but also the immeasurable importance of breastfeeding for the psycho-social development of an individual.

The policy of successful breastfeeding starts from the viewpoint that breastfeeding, as an optimal type of nourishment, achieves :

1. Proportional physical growth and psychological development of the infants and babies, protection from diseases which are in direct correlation with the nourishment and care.

2. The health of a woman which is in correlation with maternity and

3. Economic benefit to the families with children and to the society in general.

The awareness of the breastfeeding importance is developing worldwide. There is a great misunderstanding, even among the most qualified medical experts, on the need and the way of assisting mothers in breastfeeding. The previous medical practice was undeliberately ruining the breastfeeding for years. Now, the practice is changing.

In all parts of the world, rich or poor, the medical staff has started to support the reform of the hospital practice and the society's support of breastfeeding (4,5).

Aims

The aim of the research was to ascertain demographic and anamnestic factors which influence the implementation of the baby friendly programme.

Materials and methods

The study was undertaken at OGC CC Kragujevac in Kragujevac, for the purpose of collecting the data, when a specially designed questionnaire was used. The study group consisted of 216 examinees. The control group also consisted of 216 examinees. The control group was deliberately made to contain the same number of examinees, so that we could observe the obtained results more easily.

Range of 216 examinees (a total number of 432) is representative and sufficient for data processing, and practically presents a demographic structure of the population that Maternity Hospital in Kragujevac of Sumadija Region covers.

Data processing was done with the help of PC and purposefully designed programmes.

Statistic analysis was conducted by means of the standard method of calculating the probability of particular parameters' occurrence, data variability, the average values, measures of the reciprocal dependence by defining the correlation level, eg. contingency. The conclusion on validity of the differences between certain parameters and their probabilities was done by the application of the adequate tests: Student's t test, (t), χ^2 test and Kolmogorov-Smirnov test. For the reliance level, 5% or $p < 0,05$ were applied.

Results

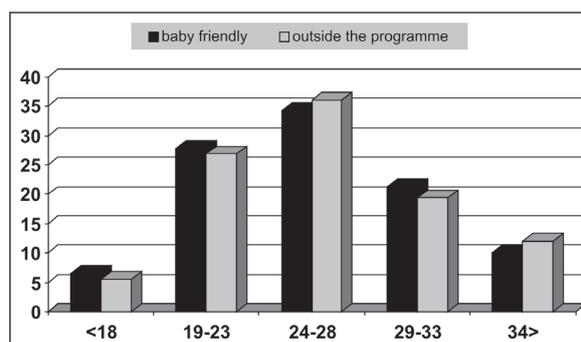
The analysis was based on the of sample 432 examinees (216 within baby friendly programme and 216 examinees outside the programme).

The greatest number of examinees from both analysed groups was 24 to 29 years of age, (34.3% to 36.1%), eg. from 19 to 29 (62.1% to 63%). Probability of presence in other age groups was statistically smaller. This result was presented by Student's test, and the similarity of distribution by K-S and by χ^2 test. The average age of the examinees was 25.9 years.

The outcome is that distributions of probabilities are similar, that is, in both groups of the examinees, the greatest age probability was the age from 19 to 28, which was equivalent to the age probability of the pregnant women from the general population in the observed region, in this case the Sumadija Region (Table 1, Figure 1).

Table 1. Age

Age	Baby friendly		Outside the programme	
	N	%	N	%
<18	14	6.5	12	5.6
19-23	60	27.8	58	26.9
24-28	74	34.3	78	36.1
29-33	46	21.3	42	19.4
34>	22	10.1	26	12.0
Total	216	100.0	216	100.0



Graph 1. Age

According to the place of residence, mothers from the study group included in the baby friendly programme and the examinees from the control group were equally present, so that they represent the population of pregnant women in the observed region. In both groups of the examinees, more of them came from the urban areas, which was shown by the Student's t test, (around 70%). The obtained result represented the population of pregnant women in Sumadija Region, regardless of the fact whether they decided to start with the baby friendly programme or not (Table 2).

Table 2. Place of residence

Place of residence	Baby friendly		Outside the programme	
	N	%	N	%
Town	152	70.4	143	66.2
Village	64	29.6	73	33.8
Total	216	100.0	216	100.0

With equal probability, women who have just given birth, being included in the programme or not, lived in bigger families (62.0% to 67.6%). These probabilities, or living in a bigger family, are significantly higher from the opposite result.

The bigger family means a joint life of husband and wife with other members of the family, such as their parents etc. The results present well the population of women who have just given birth and points to the fact that the majority of couples lived in bigger families, regardless of the fact whether they were included in the programme or not. We can conclude that living in bigger families does not affect the decision of the pregnant woman whether to start with the programme or not (Table 3).

Parity is similarly distributed in both groups of examinees, so, accordingly, there is no significant difference between the groups. In both groups of the examinees, with equal probability, parity occupies the first and second position (44.4% to 43.6% in the programme and 40.7% to 52.8% in the control group). The probability of three or more pregnancies was si-

Table 3. Living in bigger family*

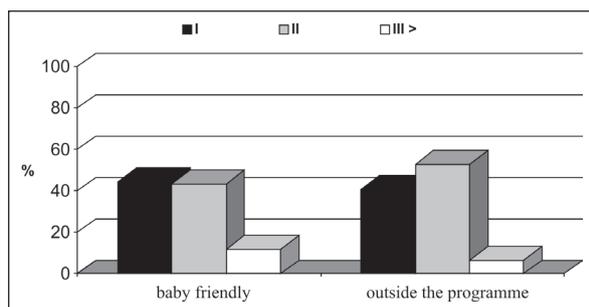
Living in bigger family	Baby friendly		Outside the programme	
	N	%	N	%
Yes	134	62.0	146	67.6
No	82	38.0	70	32.4
Total	216	100.0	216	100.0

* a joint life of husband and wife with other members of the family, such as their parents etc.

significantly smaller. The analysis shows that the parity is not an important predictor of mother's choosing to start with the programme or not. Besides, the result is a good indicator of parity probability in the observed region from demographic and epidemiologic aspect (Table 4, Figure 2).

Table 4. Parity

Parity	Baby friendly		Outside the programme	
	N	%	N	%
I	96	44.4	88	40.7
II	94	43.6	114	52.8
III >	26	12.0	14	6.5
Total	216	100.0	216	100.0



Graph 2. Parity

With significantly great difference, pregnant women, during their pregnancy and up to a delivery, were not hospitalized before the delivery (Table 5).

Analysis on the use of medications shows that there is a significant difference in the distribution of probabilities between the examined groups. The use of medications is significantly greater with the women who started with the baby friendly programme (58.3% to 28.7%). The type of the medications used was not the subject of this research (Table 6).

Table 5. Hospitalization during pregnancy

Hospitalized	Baby friendly		Outside the programme	
	N	%	N	%
Yes	27	12.5	24	11.1
No	189	87.5	192	88.9
Total	216	100.0	216	100.0

Table 6. Use of medications during pregnancy

Use of medications	Baby friendly		Outside the programme	
	N	%	N	%
Yes	126	58.3	62	28.7
No	90	41.7	154	71.3
Total	216	100.0	216	100.0

According to duration of the gestation period in both examined groups, pregnancies ended after 37 weeks of the gestation. It means that in about 97% to 99% of cases, those were full-term pregnancies (according to the criteria of WHO on the full-term pregnancy). Therefore, duration of the gestation is not the parameter affecting the selection when to start with the programme (Table 7).

Table 7. Duration of gestation period (full-term pregnancy)*

Full-term pregnancy	Baby friendly		Outside the programme	
	N	%	N	%
Premature	2	0.9	6	2.8
Full term	214	99.1	210	97.2
Total	216	100.0	216	100.0

* Full-term pregnancy ≥ 37 and more gestation weeks, WHO 1961

Discussion

The age structure of the examinees in both examined groups corresponded to the age structure of the pregnant women from other researches, and in most cases, the age ranged from 19 to 28 years (around 63%). The majority of examinees from similar researches were 19 to 28 years of age, while their number

was smaller under the age of 18 and above 34 years of age (6,7,8).

The average age of the examinees in our study was 25.9 years. Our examinees were 6 months younger than the examinees in the aforementioned researches (9,10,11).

The greatest number of the examinees (from 62% to 68%), in both examined groups, lived in bigger families. Joint life in bigger families was an important factor in this research from the aspect of possible influence on the woman's decision to be included in the programme. It was proved that living in bigger families was not a relevant factor for the woman's decision to start with the baby friendly programme. The wider community in the scope of the social aspect of living was present in the most (over 70%) of researches in Europe (12,13,14) and over 65% of researches in the United States of America (15,16).

The greatest number of pregnant women (around 70%) in both examined groups lived in urban areas. The acquired result represents the population of pregnant women in Sumadija region, regardless of the fact whether women decided to be included in the baby friendly programme or not. There was a greater number of women living in urban areas that were included in the baby friendly programme (over 75%). Also, the similar results were registered in the studies on the effects of breastfeeding in Australia and in the United States of America (17, 18, 19).

The greater presence of women from the urban areas in baby friendly programme, in similar world researches (20,21), can be explained by the better possibilities for these women to be informed on the principles and contents of the emotional closeness with newborn babies programme (22).

The greatest number of examinees from the study group (43,6%) and control group (52,8%) were secundiparas, then primiparas from the study group (44,4%) and 40,7% from the control group. The result of the research shows that parity is not the decisive factor for the future mother to choose to start with the programme, since there were no differences between the examined groups. The result is a good indicator of the probability of the parity in general, within the observed region, based on the demographic or epidemiologic aspects. It was decided that there are other factors

that influence the future mother to start with the BABY FRIENDLY programme.

The women from the study and control group were hospitalized during the pregnancy with equal probability. Similar results can be found in researches in Canada (23), in the United States of America (24,25) and in Europe (26,27).

More than the half of the examinees from the study group and more than the quarter of women from the control group during their pregnancy used medications. It was proved that the examinees from the study group used medications during their pregnancy in greater extent than women from the control group. The probable reason for the use of certain medications was in function of providing safe course of pregnancy in women within the programme. The use of medications has positive effect on the selection in the programme. Similar distribution of use of medications during pregnancy within baby friendly programme, is found in the researches in Latin America (28,29).

According to duration of gestation in both examined groups, the pregnancies terminated in the 37th week and later. It means that in around 97 to 99% cases it was full-term pregnancy (according to the WHO's recommendation). In such way, prematurity, e.g. gestation age is not a relevant parameter that could be decisive for starting with the baby friendly programme. Some researchers confirmed that duration of the gestation period influences mother's decision to start with the baby friendly programme (30,31).

Conclusion

The greatest numbers of examinees from both groups were from 19 up to 28 of age. The average age was 25,9 years.

The greatest number of examinees lived in bigger families in urban areas.

Parity was with equal probability first or second and was not decisive for starting with the programme.

The pregnant women with significant probability were not hospitalized during the pregnancy.

The probability of medications' use was significantly stronger in women who started with the baby friendly programme.

In most of the cases, those were full-term pregnancies.

References

1. Quantity and quality of breast milk. Report on the WHO Collaborative Study on Breast Feeding. Geneva, World Health Organisation; 1985.
2. Raiha N. Nutritional proteins in milk and the protein requirements of normal infants. *Pediatrics*, 1985; 75:5142-45, 76:329.
3. Gaull G. Milk protein quantity and quality in low birth weight infants. III. Effects on sulphur amino acids in the plasma and urine. *J Pediatr* 1077; 90:348-55.
4. Meier PP, Brown LP. State of the science: Breastfeeding for mothers and low birthweight infants. *Nurs Clin North Am* 1996; 31:351-65.
5. Meier PP, Brown LP. Strategies to assist breastfeeding preterm infants. *Rec Adv Pediatr* 1997; 15:1137-50.
6. Siri WF. Body Composition From Fluid Spaces and Density: Analysis of Methods. Donner Laboratory of Biophysic and Medical Physics, rep 19, Berkley, University of California, 1985; 312;805-11.
7. Hair JF Jr, Anderson RE, Tatham RL, Black WC. *Multivariate Data Analysis with Readings*. New Jersey, USA. 1995; 4: 78-101, 235-87, 450-5.
8. Jevtovic IM, Devic RM. *Medical statistics with multivariate analysis introduction*. Kragujevac, 1999; 1: 51-60, 162-73.

9. Prentice A, Addey CVP, Wilde CJ. Evidence for local feedback control of human milk secretion. *Biochem Soc Trans* 1989; 15: 122.
10. Righard L, Alade MO. Sucking technique and its effect on success of breastfeeding. *Birth* 1992; 19: 185-9.
11. Iffrig MC. Nursing care and success in breastfeeding. *Nurs Clin North Amer* 1968; 3: 345-54.
12. Melsen B, Stensgaard K, Pedersen J. Sucking habits and their influence on swallowing pattern and prevalence of malocclusion. *Eur J Ortho* 1979; 1(4):271-80.
13. Davis D, Bell P. Infant feeding practices and occlusal outcomes: A longitudinal study. *Can Dent Assoc* 1991; 57(7):593-4.
14. Paunio P, Rautava P, Sillanpaa M. The Finnish family competence study: The effects of living conditions on sucking habits in 3-year-old Finnish children and the association between these habits and dental occlusion. *Acta Odontol Scand* 1993; 51(1):23-9.
15. American Academy of Pediatrics Work Group on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics* 1997; 100(6): 1035-9.
16. United States Breastfeeding Committee. Breastfeeding in the United States: A National Agenda. Rockville, MD: MCH Bureau, Health Resource and Services Administration, DHHS; 2001.
17. Victora CG, Behague DP, Barros FC. Pacifier use and short breastfeeding duration: Cause, consequence or coincidence. *Pediatrics* 1997; 99(3):445-53.
18. Woolridge M. Baby controlled breastfeeding: Biocultural implications. In: Breastfeeding: Biocultural Perspectives, ed. P. Stuart Macadam and K. A. Dettwyler. New York: De Gruyter; 1995.
19. American Academy of Pediatrics Work Group on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics* 1997; 100:1035-9.
20. MacPherson C, Talbot F. Standards for directories for mother's milk. *J Pediatr* 1939; 15:461-8.
21. American Academy of Pediatrics Committee on Fetus and the Newborn and American College of Obstetrics and Gynecology Committee on Obstetric Practice. Guidelines for Perinatal Care, 4th ed. Elk Grove Village, IL: AAP, 1997, 288-90.
22. American Academy of Pediatrics Committee on Infectious Diseases. 1997 Red Book, 24th ed. Elk Grove Village, IL: AAP, 1997, 76-7.
23. Labbok MH. Health sequelae of breastfeeding for the mother. *Clin Perinatol* 1999; 26(2):491-503.
24. Lawrence RA. Breastfeeding: A Guide for the Medical Profession, 3rd edition. St. Louis: Mosby; 1989.
25. Lee PC, Majluf P, Gordon IJ. Growth, weaning and maternal investment from a comparative perspective. *J Zool Lond* 1991; 225:99-114.
26. Indicators for assessing breastfeeding practices. Report of an informal meeting in June 1991, Geneva. World Health Organization; Geneva.
27. Andraca I, Uauy R. Breastfeeding for optimal mental development. In Behavioral and Metabolic Aspects of Breastfeeding, Ed. A. P. Simopoulos, J. E. Dutra deOliveira and I. D. Desai. World Rev Nutr Diet. Basel: Karger; 1995;1-27.
28. Meier PP. Professional Guide to Breastfeeding Premature Infants. Columbus, OH: Ross Laboratories, 1997.
29. Riordan J, Koehn M. Reliability and validity testing of three breastfeeding assessment tools. *JOGNN* 1997; 26:181-7.
30. Meier PP. Caution needed in extrapolating from term to preterm infants (reply to letter to editor). *J Hum Lact* 1995; 11:91-2.
31. Meier PP, Lysakowski TY, Engstrom JL. The accuracy of test-weighing for preterm infants. *J Pediatr Gastroenterol Nutr* 1990; 10:62-5.

DEMOGRAFSKO-ANAMNESTIČKI PARAMETRI KOJI UTIČU NA ULAZAK U BABY FRIENDLY PROGRAM

Momčilo Đorđević, Gordana Đorđević i Božidar Jovanović

Različite studije i opsežna istraživanja, posebno posljednjih godina, o korisnosti dojenja i upotrebe majčinog mleka u ishrani odojčadi ukazala su na neprocenljivu korist za majke, odojčad, porodicu i društvo.

Cilj ovog istraživanja je da se uvidi koji su to demografski i anamnesticni faktori koji utiču na ulazak u baby friendly program.

Studija je sprovedena u GAK KC Kragujevac na ukupno 432 ispitanice.

Prosečna starost ispitanica iznosila je 25,9 godina i za 6 meseci su mlađe od ispitanica iz sličnih istraživanja u svetu. Ispitanice su najčešće bile iz gradskih sredina i živele su u široj porodičnoj zajednici, i to nije uticalo na ulazak u program. Sa podjednakom verovatnoćom, trudnoća je bila prva ili druga i najčešće nije bilo hospitalizacije tokom trudnoće u obe ispitivane grupe. Znatno češća je upotreba medikamenata u baby friendly programu. Razlog za pozitivan uticaj upotrebe medikamenata u trudnoći na ulazak u baby friendly program leži verovatno u većem nadzoru u trudnoći. Gestacijska starost nije uticala na selekciju za ulazak u program.

Povećanim nadzorom i upotrebom medikamenata u trudnoći možemo pozitivno uticati na ulazak u baby friendly program majke i novorođenčeta. *Acta Medica Medianae* 2005;44(4): 49 – 53.

Cljučne reči: baby friendly program, demografija, anamnesticni parametri