

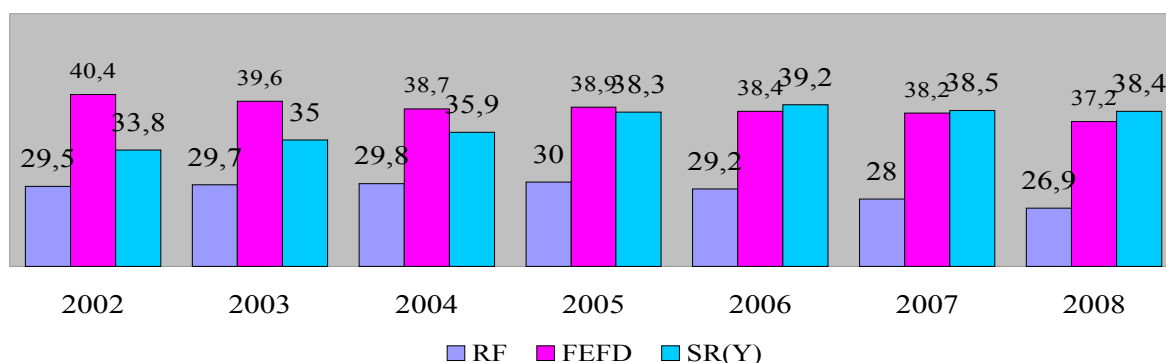
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### SOCIO-MEDICAL STUDIES OF CHILDREN HEALTH BORN OUTSIDE OF MARRIAGE

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The growth of non-marital births is one of the most urgent problems of modern medicine now. Nearly one in three children are born outside of marriage (in the year 2000 - 28.0% [1, 2]) as it is noted in the "State Report on the health status of the Russian Federation for 2004 year".

Dynamics of illegitimate births in the Republic of Sakha (Yakutia), compared with Russian Federation and the Far East Federal District data, is characterized by a pronounced increase (Fig.1).



**Fig.1** Dynamics of illegitimate births in Russia (RF), Far East Federal District (FEFD), Sakha Republic (Yakutia) for the period of 2002-2008.

And though there were 17.9% of children of the total births born out of wedlock in 1990 in the Republic of Sakha (Yakutia), but in the year 2010 it was 39.2% already.

According to modern research, emotional stress in women related to pregnancy in the common law marriage, has a significant impact on the incidence and severity of toxicosis of pregnancy. Unfavorable state of the pregnant woman causes a higher level of complications such as abruptio placenta, threatened premature labor (N.V. Polunina, 1999; O. Agafonova, 2002). In addition, there is a significant increase in preterm births, sick and injured infants (E.B. Yakovleva, 1992) [3,4,5].

However, despite the great scientific and practical significance of the problem of illegitimate births, there is a significant deficit of studies on this group of medical and social risk, which should be a priority for medical observation.

## Objective

To analyze the dynamics of illegitimate births in the Republic of Sakha (Yakutia) from 1999 to 2009 and assess the health status of children born to mothers who are not in a registered marriage.

## Materials and methods

The study was conducted in two stages. *In the first stage* to assess the frequency of illegitimate births, the data were analyzed by the Territorial Department of Federal Service of State Statistics (FSSS MOT) in the Republic of Sakha (Yakutia) for 1999-2009.

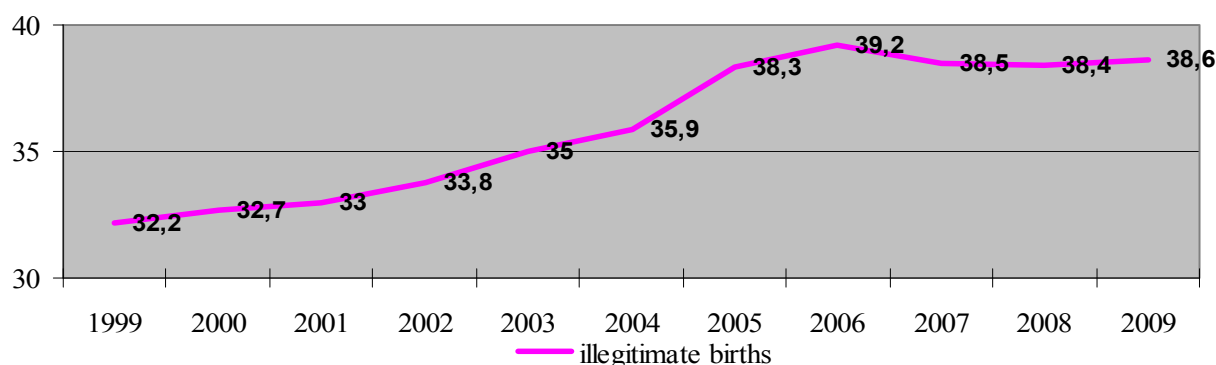
*In the second stage* studied the health status, pregnancy, births to unmarried mothers ( $n = 101$ ) and mothers who are married ( $n = 102$ ), as well as the health status of children born to them.

According to the study design, the main (incomplete families) and control (complete families) groups have been formed based on the twin-dual selection on the basis of the leading social defect. The history of delivery (Form 096/U) and the history of the newborn (Form 097/U) were analyzed, of those who were born in 2008-2011, at the first obstetric department of Yakutsk City Hospital.

The materials obtained were processed using the software package «STATISTICA v.6.1 © STATSOFT, USA». Methods of descriptive statistics were used (calculation of mean values, standard error and Student's  $t$ -test). Statistically significant difference was considered for  $p < 0.05$ .

## Results and discussion

An analysis of statistical data on illegitimate births in the Republic of Sakha (Yakutia), obtained at the FSSS of Sakha (Yakutia) for 1999-2009 showed a tendency to increase of the proportion of children born out of wedlock. At the same time the highest rates were observed in 2006 - 39.2% and in 2009 - 38.6% growth rate - 19.9% (Fig.2).



**Fig.2** Dynamics of illegitimate births in the Republic of Sakha (Yakutia)

The highest rates of the illegitimate births were recorded in the city of Yakutsk and in the industrial areas of the Republic of Sakha (Yakutia). It can be explained by a higher population density and an increase in external migration. The lowest rates were recorded in the Arctic zone, inhabited mostly by indigenous people (tribal communities), who are engaged in reindeer herding, fur and fish trades.

Motherhood at the age of 18 years is a serious medical and social problem caused by these women's low social support as well as lack of psychological maturity. Pregnancy at a young age takes place in a functional immaturity of the organism and the inadequacy of adaptive mechanisms. These facts create a high risk of complications for mothers as well as for fetus.

An even more pressing problem is the illegitimate birth rate of women aged 18 years. Throughout the study period, the proportion of children born out of wedlock increased in the Republic by 1.3 times on average for women less than 18 years old. The index rose by 21.4% for rural areas and by 15.4% in the city areas. The figure was 76% in the city and 90.4% in rural areas of the total number of births in this age group in 2009.

At the age structure of women who gave birth out of wedlock prevailed young mothers aged 15-19 years. It is significantly higher than in other age groups (Table 1).

*Table 1*

**The share of non-marital births by mother's age  
(in % of total births in each age group)**

Years	from 15 to 19		from 20 to 24		from 25 to 29		from 30 to 34		from 35 to 39		40 and older	
	C	V	C	V	C	V	C	V	C	V	C	V
1999	52	52,2	32,6	30,8	30,7	23,9	30	21,6	31,7	25,3	30,7	21,2
2000	49,6	46,9	35	32,7	32,6	24,8	29	22,1	33,9	26,7	39,6	18,1
2001	48,9	49	33,9	32,6	32	25	28,9	22,8	34,5	27	42,8	25,8
2002	50,2	47,4	35,9	34,7	31,4	26,9	29,3	25,9	34	25	34,8	21
2003	49,5	50,7	35,4	35,7	32,8	29,3	31,3	25,9	33,4	28,2	37,5	20,3
2004	53,9	35,9	35,7	37,7	32,4	29,9	33,5	26,9	34,8	25	29,7	22,6
2005	56,5	62	39,3	40	32,9	32,7	32,8	27,8	36,5	25	41,8	23,1
2006	56,5	63,8	38,3	44,4	32,8	36,5	34,4	29,3	35,5	21,9	39,2	27,8
2007	57,5	66,3	40,1	44,3	30,6	34	31,6	31,4	34,8	23,3	44,9	28,6
2008	57,8	66,2	38,2	44,4	33,3	33,4	31,9	32	35,9	21,2	46,2	19,9
2009	63,5	68,2	39,4	46	31,8	33,6	30,9	31,5	34,2	26,1	37	31,6
rate of increase	22,1	30,7	20,9	49,4	3,6	40,6	3	45,8	7,9	3,2	20,5	49,1

Note: C - a city, V – a village.

Analysis of data showed an increase in illegitimate births in all age groups. In the city over the study period, the highest growth rate of illegitimate births was 22.1% for the age group of 15-19 years. The smallest increase was 3% among women from 30 to 34 years.

In rural areas, the highest growth rate was 49%. It was recorded for the age group of 20-24 and over 40 years. The lowest growth rate was 3.2% for ages from 35 to 39.

Catamnesis of births of 203 women was examined as a part of the second stage of the present study. Main group comprised 101 women who are not in a registered marriage. The control group included 102 women who are married. The history of development of their infants has been analyzed.

The age structure of mothers ranged from 15 to 44 years. The greatest number of mothers in the main as well as in the control groups were women aged 20 to 24, 38 (37.6%) and 35 (34.3%) years respectively. In the main group there were 16.8% of young mothers aged 15 to 19 years and in the control group the rate was 2%. In the age group of 30 to 40 years and older, was dominated by women who are in a registered marriage.

Extragenital pathology was detected in 83 mothers (82.2%) in the main group and in 88 women (86.3%) of the control group. The leading place in the structure of extragenital pathology belongs to diseases of the genitourinary system in both groups: 55.4% - in the main group,

39.2% - in the control group. There is a high percentage of thyroid disease, mostly in the form of endemic goiter disease of the respiratory and digestive organs.

It is found that 73 mothers (72.3%) from the main group had complicated pregnancy. The figure was 52 (50,9%) ( $p < 0,05$ ) for the control group.

In the structure of the pathology of pregnancy leading role belongs to chronic intrauterine hypoxia, feto-placental insufficiency and gestosis of the 1<sup>st</sup> and 2<sup>nd</sup> degrees. Morbidity was noted in 22 births (21.8%) pregnant women from the main group. Much more childbirth (delivery) stimulations have been made: for 19 (18.8%) in the main group and for 14 (13.7%) in the control group.

Deliveries for most women in both groups pass through the birth canal. Operative delivery was performed for 5 patients (4.9%) from the main group and for 6 (5.9%) in the control group.

According to the literature [1,2], illegitimate prematurely children births were often by more than 2 times. According to our study, 30 children (29.7%) were born prematurely in the main group and 9 children (8.8%) in the control group. Significantly differentiated ( $p < 0,05$ ).

According to Apgar scale score, body weight of newborns at the 1<sup>st</sup> and 5<sup>th</sup> minute for children born outside of marriage was significantly lower ( $p < 0.05$ ) than for children from the control group (Table 2).

Table 2

**Indicators of weight, height and Apgar scale of the studied newborns**

group	weight	growth	Apgar at 1 min	Apgar at 5 min
main group <i>n</i> = 101	3263,3±514,5	51,6 ± 2,3 cm	7,04 ± 0,8	7,42 ± 0,9
control group <i>n</i> = 102	3407,8±462,3	52,2 ± 2,4 cm	8,13 ± 0,6	8,55 ± 0,6
<i>p</i>	<0,05	>0,05	<0,01	<0,01

We observed prolonged jaundice for 12 infants (11.9%) in the main group and for 6 infants (5.9%) in the control group.

Clinical signs of CNS in the form of hypoxic-ischemic encephalopathy were noted for 10 infants (9.9%) in the main group and for 6 children (5.9%) of the control group.

We observed congenital malformations, mainly in the form of CHD among children: for 8 infants (7.9%) in the main group and for 3 (2.9%) in the control group.

Distribution of health groups: 1) we did not identify children for the 1<sup>st</sup> group of health; 2) for the 2<sup>nd</sup> health group there were 93 children (92.1%) in the main group and 99 children (97.1%) in the control group; 3) for the 3<sup>rd</sup> health group there were 7 children (6.9%) in the main

group and 3 children (2.9%) in the control group. There was 1 child (0.9%) in the main group with the 4<sup>th</sup> group of health.

### **Conclusion**

Thus, the illegitimate birth rate has increased by 6.4% for the last decade (index of births out of wedlock was 32.2% in 1999 and 38.6% in 2009). The increase of the fertility out of wedlock in a group of young mothers (under 20 years old) is an important social problem.

According to the study, pregnancy was complicated for 73 mothers (72.3%) ( $p < 0.05$ ) in the group of single mothers. The same was for 52 (50.9%) mothers in the control group. For the threats of termination, fetal hypoxia, feto-placental insufficiency as well as preeclampsia of the first and second degrees was the leading factor in the structure of pregnancy complications.

Proportion of preterm births among single mothers was 30 (29.7%) but it was 9 (8.8%) among married women ( $p < 0.05$ ). Body weight of newborns, Apgar score at the 1<sup>st</sup> and 5<sup>th</sup> minute for children born outside of marriage was significantly lower ( $p < 0.05$ ) than in the control group of children.

Among the diseases of children born outside of marriage, there were birth defects, intrauterine growth retardation, morphofunctional immaturity, prolonged jaundice and perinatal CNS involvement. These diseases are twice higher than that for children born in wedlock.

An illegitimate birth is one of the major problems of socio-demographic policy. An appropriate response from the government is required for this problem.

### **Summary**

Negative changes in marriage and family relations are becoming more pronounced in the present conditions. This can be seen growing out of wedlock births. The number of illegitimate children is increasing rapidly among juvenile female, aged 14-17 years.

Illegitimate birth is a problem that has several negative effects: emotional stress in women related to pregnancy in the common law marriage, has a significant impact on pregnancy, and causes a higher rate of complications. It is also accompanied by a high number of preterm births and sick babies.

However, despite the great scientific and practical significance of the problem, there is an obvious shortage of papers for this group of high medical and social risk until now.

**Keywords:** births out of wedlock, children, health

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