SOCIO-ECONOMIC RISK FACTORS FOR LOW BIRTH WEIGHT

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ABSTRACT :

Srisongkram T. Socio-Economic Risk Factors for Low Birth Weight. (Region 7 Medical Journal 1997 ; 1 : 9-15).

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The overall incidence of low birth weight was 10.5%, incidences among the age groups of below 20, 20-24, 25-29, 30-34, 34 and over were 13.8%, 11.4%, 8.6%, 10.1% and 8.6% respectively. In considering the maternal education it was found that the incidence of low birth weight in uneducated women was 28.0% while the incidences among those finished the primary school, secondray school, vocational college level and higher education were 25.7%, 2.9% and 3.1% respectively. The incidences of low birth weight in different groups of occupation were 24.5%, 9.5% and 1.9% among farmers, house wife, business group and government officers. Those who had family income below 2,000, 2,000-4,000 and 4,001 or over bahts/month the incidences of low birth weight were 30.6%, 5.5% and 0.5% respectively.

บทคัดย่อ :

ธาดา ศรีสงคราม. ปัจจัยเสี่ยงทางเศรษฐฐานะที่ทำให้ทารกคลอดมีน้ำหนักตัวน้อย. (วารสารแพทย์เขต 7 2540 ; 1 : 9-15).

กลุ่มงานสูติ-นรีเวชกรรมและวางแผนครอบครัว, รพ. ราชบุรี.

ได้ทำการศึกษาปัจจัยเสี่ยงทางเศรษฐฐานะ ที่ทำให้ทารกแรกคลอด ที่โรงพยาบาลราชบุรี ในปี พ.ศ. 2537 จำนวน 1,407 ราย พบอุบัติการของภาวะแรกคลอดน้ำหนักตัวน้อย ร้อยละ 10.5 เมื่อแยกกลุ่มอายุเป็นช่วง น้อยกว่า 20 ปี, ระหว่าง 20-24, 25-29, 30-34 และ 35 ปี หรือมากกว่า พบว่ามีอุบัติการ ร้อยละ 13.8, 11.4, 8.6, 10.1 และ 8.6 ตามลำดับ เมื่อคำนึงถึงระดับการศึกษาพบว่าหญิงที่ไม่ได้เรียนหนังสือ กลุ่มที่จบชั้นประถมศึกษา มัธยมศึกษา อาชีวศึกษา และสูงกว่า พบอุบัติการร้อยละ 28.0, 25.7, 2.9 และ 3.1 ตามลำดับ สำหรับการจำแนกกลุ่มอาชีพพบว่ากลุ่มที่เป็นชาวไร่ ชาวนา แม่ค้า หาบเร่ กรรมกร ลูกจ้าง กลุ่มแม่บ้าน นักธุรกิจ เจ้าของกิจการ พ่อค้า และกลุ่มข้าราชการพบอุบัติการร้อยละ 24.5, 9.5 และ 1.9 ตามลำดับ จากการศึกษาและติดตามเกี่ยวกับรายได้ของครอบครัวพบว่าผู้มีรายได้น้อยต่ำกว่า 2,000, 2,000-4,000 บาท และมากกว่า 4,000 บาท ต่อเดือน อุบัติการร้อยละ 30.6, 5.5 และ 0.5 ตามลำดับ ดังนั้นจึงปรากฏว่าอายุของมารดา, การศึกษา, อาชีพ และรายได้ของครอบครัว จะเป็นปัจจัยเสี่ยงที่สำคัญที่ทำให้ทารกแรกคลอดมีน้ำหนักตัวน้อย

Introduction

The incidences of low birth weight vary from place to place country to country. The high incidences are encountered among the developing countries reflecting the maternal and child health cares in the particular areas. Since low birth weight babies are not only the preterm babies but they are the growth retard ones or even both. So it is associated with the high incidence of infant mortality and morbidity.[1-4] The low birth weight infants, as previously reported were almost 40 times likely to die in the neonatal period, particularly those of the very low birth weight were 200 times did so.[5,6] Again these infants were more prone to infectious diseases particulary the respiratory tract infection.[7]

It is quite obvious that these infants there after have the poor intellectual and physical development which create the problems for family and the social ones. The Ministry of Public Health has strengthened the Maternal and child Health Care Services in order to achieve the maximal coverage of both preventive and curative cares all levels. Particular attention has been paid to the programme which focuses on reducing the incidence of low birth weight infants to 8% or even under by the year 2,000. Thus, the risk approach has introduced with the aim of improving the quality of antenatal care and the screening of high risk mothers.

It is well-accepted that the socio-econonmic risk factors play the improtant role in reducing the incidence of the low brith weight.[8-11] Therefore it is the purpose of this study to determine the existing socio-economic risk factors of low birth weight at Ratchaburi Hospital in order to develop the strategies for reducing the rate of low birth weight.

Materials and methods

The study was carried out at Ratchaburi Hospital. The medical record of women delivered in 1994 were retrieved and the study protocol was designed. Particular attentions were paid on the maternal age, education, occupations and the family incomes of those delivered the infants with the birth weight of below 2,500 grams. A simple statistic was emloyed to analyse the date and expressed in frequency distribution.

Results

The were 1,407 deliveries took place in 1994 at this hospital. Among these infants 148 were accounted for the low birth weight infants. This makes the incidence of low birth weight distribution is shown in Table 1.

Conclusion

AGE GROUP : There were 5 different age groups that were considered. The younger mothers (below 20 years old) delivered 13.8% of low birth weight comparing with 11.4%, 8.6%, 10.1% and 8.6% in 20-24, 25-29, 30-34 and 35 years old and over. Those of younger mothers were too young and unskill to be a mother. In the reproductive group 20-34 years of maternal age delivered low incidence rate of LBW in this study. It is possibility of gainig more experiences in caring of pregnancy therefor the pregnancy outcomes in these groups were better than those of younger mother.

Table 1 Distribution of infant birth weight

Birth weight (grams)	Frequency	Percentage (%)	Cum. Percentagae (%)
LBW 1,000 - 1,499	10	0.71	0.71
1,500 - 1,999	24	1.71	2.42
2,000 - 2,499	114	8.10	10.52
NBW 2,500 - 2,999	489	34.75	55.27
3,000 - 3,499	574	40.80	90.07
≥ 3,500	196	13.93	100.00
Total	**1,407**	**100.00**	

Table 2 Distribution of infant birth weight and maternal age

Maternal age (year)	LBW		NBW		Total	%
	No	%	No	%		
15 - 19	30	13.8	186	86.1	216	15.4
20 - 24	50	11.4	387	88.6	437	31.0
25 - 29	35	8.6	373	91.4	408	29.0
30 - 34	22	10.6	196	89.9	218	15.5
≥ 35	11	8.6	117	91.4	128	9.1
Incidence	**148**	**10.5%**	**1,259**	**89.5**	**1,407**	**100.0**

Table 3 Distribution of infant birth weight and maternal education

Maternal Education	LBW		NBW		Total	%
	No	%	No	%		
Uneducated	7	28.0	18	72.0	25	1.8
Primary (1-6)	113	25.7	326	74.3	439	31.2
Secondary (1-6)	14	2.9	477	97.1	491	34.9
College and over	14	3.1	438	96.4	452	32.1
Incidence	**148**	**10.5%**	**1,259**	**89.5**	**1,407**	**100.0**

Table 4 Relationship of infant birth weight and maternal occupation

Maternal Occupation	LBW		NBW		Total	%
	No	%	No	%		
Farmer*	95	24.5	292	15.5	387	27.5
House wife	42	9.5	399	90.5	441	31.3
Business**	11	1.9	568	98.1	579	41.2
Incidence	**148**	**10.5**	**1,259**	**89.5**	**1,407**	**100.0**

* Farmer : including gardener, labourer vendor, employee

** Business : including own business, trader, merchant, government officer

Table 5 Association between infant's birth weight and family income

Family income baths/ month	LBW		NBW		Total	%
	No	%	No	%		
< 2,000	82	30.6	186	69.4	268	19.0
2,000 - 4,000	52	5.5	886	94.5	938	66.7
≥ 4,001	10	0.5	191	95.0	201	14.3
Incidence	**148**	**10.5**	**1,259**	**89.5**	**1,407**	**100.0**

In the other point of view the younger mother is too yonug and her physical growth has not fully developed, reproductive system is not well prepare for pregnancy. It is possible that her ovarian function is not well stabilized. So that the hormonal effect on her reproduction is deficient. These factors may result in complication of pregnancy as well as the delivery.

EDUCATION GROUP : Considering among the maternal education, uneducation and low education delivery higher LBW incidence as 28.10% and 25.7% (uneducation and those whom finished primary school). The higher educated mother as completing of secondary school, college and over

deliveried low incidece of LBW as 2.9% and 3.1% respectively, slight increasing in the group of finishing collage and over more than the secondary school was not significant in this studying another risks should be considered as occupation and family incomes.

MATERNAL OCCUPATION : Farmer maternal group including farmer, labourer, employee, gardener and vendor delivered higher incidence of LBW than housewife and business group (own business, trader, merchant and government officer) as 24.5%, 9.5% and 1.9% respectively. Hard work and Long working hours have the independent effects on low birth weight and be reflect elements of psychological stress or phsical fatigue.

FAMILY INCOME : Higher family income delivered lowest birth weight incidence rate as 0.5% (4,001 baths per month and over) comparing 30.6% of below 2,000 bahts and 5.5% of 2,000-4,000 baths. This risk factors can be explained as maternal occupation in the term of physical and physiological stress in low family income which may cause preterm delivery and LBW outcomes.

Discussion

The incidence of LBW encounted at this hospital is still high despite it was anticipated that at the end of the 7th National Health Development Plan the rate should be lower than 8%. It is not really a hard work to bring about such a goal if we recognized the real situation followed by strategies were planned and be acted accordingly. Socio-economic factors play the important roles for the development of the nation and the roles in lowering the incidence of LBW.

Having look at the results of this study one can see that there are ample evidences for reduction of this LBW rate. It is quite obvious that the incidence of LBW is high in those young mothers, particularly under 20 years of ages as table 2. This reflects several aspects of women's health in this age group. Since this study is the hospital-based situation analysis only, therefore the attention was not paid to various confounders such as the unplanned and unwanted pregnancy, the number of pregnancy, the past obstetric performances, the antenatal clinic visit, and others which make the conclusion impossible as to whether LBW is the consequence of the maternal age alone or the combination of these factors. However, it is believed that the roles of health personel to support the primary health care activities must be strengthened participation in this aspect. Likewise the important of maternal age, education, occupation and incomes all play the contributing factors of LBW. It is also undeniable that with low level of education the possibility to being employed with high income is impossible. These may result in poor maternal nutrition which affects growth of the fetus considerably resulting in LBW. It can be initially concluded that improving the supervision system of mother and child health service activities with special emphasis on the factors found to be associated with LBW will lead to the decrease in perinatal and infant mortalities.

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