



Working together  
www.rcis.ro

## **Revista de cercetare și intervenție socială**

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

Selected by coverage in Social Sciences Citation Index, ISI databases

---

### **THE SOCIOECONOMIC STATUS – A RISK FACTOR FOR THE LOW BIRTH WEIGHT**

*Laura FLORESCU, Oana Raluca TEMNEANU, Dana Elena MINDRU*

Revista de cercetare și intervenție socială, 2015, vol. 49, pp. 98-112

The online version of this article can be found at:

*www.rcis.ro, www.doaj.org and www.scopus.com*

---

Published by:

Expert Projects Publishing House



On behalf of:

„Alexandru Ioan Cuza” University,

Department of Sociology and Social Work

and

Holt Romania Foundation

REVISTA DE CERCETARE SI INTERVENTIE SOCIALA

is indexed by ISI Thomson Reuters - Social Sciences Citation Index

(Sociology and Social Work Domains)



## The Socioeconomic Status – A Risk Factor for the Low Birth Weight

Laura FLORESCU<sup>1</sup>, Oana Raluca TEMNEANU<sup>2</sup>, Dana Elena MINDRU<sup>3</sup>

### Abstract

The birth weight is one of the most important indicators of a mother's health in both developed and developing countries. Low birth weight is considered a risk factor for the development of malnutrition, recurrent infections and neuro-psychological deficiencies and is influenced by social and economic factors: precarious social and economic level, birth environment, nutritional deficiencies, low education level, and professional as well, marital status and under-age mothers. Another important aspect is represented by the deficitary checks on pregnant women. The main objectives of this research were selection, synthesis, discussion and presentation of the current relationship between the social-economic status and the low birth weight. The research was undertaken in the Department of Paediatric Recovery from "Saint Mary" Children Hospital in Iasi in collaboration to the Department of Primary Care and Epidemiology from "Gr. T. Popa" University of Medicine Iasi. The group under study included mostly female infants (56.1%). Most infants came from the countryside (80.5%), from families with a low social-economic level (95.93%), with 1-4 children (73.98%), with both parents present in more than half of the cases (55.28%). Most of the infants (82-66.66%) came from mothers of low education, unemployed (91.87%). The pregnancies were kept under observation in 76 cases (61.79%). We consider important to tackle malnutrition not only medically but also socially because if infants return to the same family environment this leads to recurrent malnutrition, being disadvantaged by maintaining a vicious circle.

*Keywords:* low birth weight, social and economic status, infant health, education level, under-age mothers, nutritional deficiencies.

---

<sup>1</sup> University of Medicine and Pharmacy „Grigore T. Popa”, Medical Department, Discipline of Infant Care, Iasi, ROMANIA. E-mail: lauraflorescu60@yahoo.com

<sup>2</sup> University of Medicine and Pharmacy „Grigore T. Popa”, Medical Department, Discipline of Infant Care, Iasi, ROMANIA. E-mail: ralucatemneanu@yahoo.com (corresponding author)

<sup>3</sup> University of Medicine and Pharmacy „Grigore T. Popa”, Medical Department, Discipline of Infant Care, Iasi, ROMANIA. E-mail: eledanamindru@gmail.com

## Introduction

Low birth weight was defined by the World Health Organization (WHO) as the birth weight lower than 2500 grams (5.5 pounds). This is based on the epidemiological observations that infants with lower birth weight than 2500g present a risk which is approximately 20 times higher for poor health or even death. The low birth weight is an important indicator for infant morbidity and mortality (OECD, 2013). The children with low birth weight for a heterogeneous group of infants: premature, born on term but with a lower weight than that for their gestational age (Small for Gestational Age-SGA), as well as prematures with lower birth weight for their gestational age. A premature baby is a new-born of gestational age (GA) smaller than 37 weeks, birth weight smaller than 2500 g and birth length under 47 cm. The new-born with late uterine development has a birth weight lower by 10 percentile than the uterine growth standards or it is smaller by two standard deviations than the average weight (Florescu, Temneanu & Mîndru, 2014). The children with low birth weight fall into two categories: those who are born after a deficitary uterine development and those born before term, defined as 37 week gestational age (WHO, 2004). The causes of premature birth are numerous; most births are spontaneous, but some can be due to premature labor, spontaneous labor or caesarean section. Among the causes of prematurity we might mention the social and economic factors – unchecked pregnancy, low education level, low income and poor life conditions, drug addiction, smoking and drinking alcohol, toxic working environment, stress, physical and psychological traumas (Ohlsson & Shah, 2008). In 2014 it was considered necessary to revise the prematurity degrees, so that, according to the International Illness Ranking, we nowadays have 4 degrees of prematurity, in comparison to the previous 3. The new ranking practically splits the last category of new born from the old ranking; the changes which have been made after the WHO established the lower limit of viability as 500 g birth weight and 22 weeks gestational age (Table 1).

Table 1. *Degrees of prematurity – International Ranking of Illnesses*

Prematurely born	Gestational age (GA)	Birth weight (BW)
LBW (low birth weight)	GA < 37 weeks	BW = 2499g – 1500g
VLBW (very low birth weight)	GA < 32 weeks	BW = 1499g – 1000g
ELBW (extremely low birth weight)	GA < 28 weeks	BW = 999 - 700g
ILBW (incredible low birth weight)	GA < 24 weeks	BW < 700g

The rate of low birth weight new-borns is a lot higher in the developing countries. Asia presents the greatest percentage of 18.3%, followed by Africa, with 14.3%. We should highlight that in the poorer countries a great number of new born babies are not weighed at birth and these statistics might underestimate the real rate of low birth weight. In these countries, the low birth weight is mainly due to the mother's poor health as well as to the nutritional deficiencies in relation to the low social and economic level. It has been proven that smoking and drinking alcohol during the pregnancy are risk factors for low birth weight.

During childhood, low birth weight increases the risk to present serious illnesses such as icterus, breathing distress, anaemia and infections. In small children, it is associated to a deficitary length and weight development and cognitive development. In the USA, the children who were born with low birth weight have proven to have problems with reading and Maths skills. The high rate of school drop-out for these children was also higher. In adult age, low birth weight is associated to a high presence of chronic illnesses such as arterial hypertension, cardiopathy and diabetes (Goldenberg & Culhane, 2007).

In the world, prematurity is the main cause of death in children younger than 5 and in almost all the countries with feasible data, the premature birth rates are growing. There is a dramatic difference between the survival rates depending on the places where the children are born. For example, more than 90% of the extreme premature children (GA < 28 weeks) born in the low-income countries and die during their first days, in comparison to those born in high-income countries where the percentage reaches 10% in this category of newly-born. In 2012, WHO and its partners published a report entitled "Born Too Soon: the Global Action Report on Pre-Term Birth", which included the first estimations made for premature birth/country. WHO aims to reduce the health problems and lost lives as consequence of premature birth by taking the following measures: (1) collaborate with the member states and partners to implement "*Every Newborn: An Action Plan to End Preventable Deaths*" started in May 2014, as part of "Global Strategy for Women's and Children's Health"; (2) collaborate with the member states to strengthen the availability and quality of data on premature births; (3) present updated checks for the premature births worldwide every 3 to 5 years; (4) collaborate with partners all over the world to deepen the research on the causes of premature birth, as well as new approaches to prevent these situations and treat the premature babies; (5) periodically update the clinical guides for the management of premature birth as well as the guides on premature care, including the kangaroo mother method, feeding the low birth babies, treat the infections and breathing disorders and checking at home (the new recommendations from WHO will be published in the first three months of 2015); (6) improve the skills of the staff working in health (WHO, 2014).

One in every fifteen new-borns in the European Union in 2010 – or 6.9% of the total numbers of births – weighed less than 2 500 grams at birth. Northern and Baltic countries – including Estonia, Finland, Iceland, Latvia, Lithuania and Sweden – reported the smallest percentages for low birth weight, smaller than 5.0% out of the newly-born. The countries from Southern Europe, including Cyprus, Greece, Portugal and Spain, as well as Bulgaria, Hungary, Romania, Turkey and the former Yugoslav Republic of Macedonia are at the other end of the ranking with rates for the low birth weight new-borns of more than 7.5%. Since 1980 and even more after 1995, the presence of low birth weight new-borns has increased in most European countries. Greece, Malte, Portugal and Spain recorded an increase during the last three decades. Consequently, the percentage of these children is now above the European average; in Poland and Hungary there was noticed a decrease in this percentage during the same period of time. Also, there have been recorded some changes in the Northern countries, including Denmark, Finland, Iceland and Sweden, although there has been noticed an increase in Norway, too (OECD, 2012).

Generally speaking, the countries which report a reduced percentage of low birth weight children also present a quite low percentage of infant mortality. This is the case of Northern countries. Japan is an exception as it reports the highest rate of low birth weight children, but also one of the smallest rates of infant mortality. In March 2013, UNICEF made some estimation and presented the global percentage of low birth weight children and the results are shown in the figure below (Figure 1).



Figure 1. Global percentage of low birth weight infants (March 2013).  
Source: UNICEF ChildInfo, 2013

The comparisons made for different population groups on national level show that the percentage of low birth weight children can be influenced by the differences in the education level, income and life conditions (Zohreh Mahmoodi *et al.*, 2013). There has been noticed that there is a relationship between the life style during pregnancy and premature birth. The life style can be changed and this objective can be reached by making efforts to increase the education level for healthcare habits and the access to information. (Kamali *et al.*, 2010). In the United States there have been noticed important differences between the ethnic groups, the rate of black children with low birth weight is almost double than that of the white (NCHS, 2011). There have also been noticed similar differences in the indigenous and non-indigenous population from Australia, Mexico and New Zealand, often reflecting the unfavourable life conditions for many of the mothers (OECD, 2011).

Education can save millions of lives. A mother's education has a significant impact on the life hope and children's health. The research undertaken in the developing countries proves without any doubt that the newborn's and children's health is going to suffer if the mother lacks education and this has been proven by numerous statistics. In the case of educated women, the presence of low birth weight, infant mortality and infant malnutrition is lower and at the same time, these women are less exposed to the risk of death at birth. The children whose mothers have a basic education in comparison to those whose mothers did not go to school have: (1) 40% more chances to survive in childhood; (2) more than two more chances to go to school; (3) more than 50% more chances to benefit from immunity programs.

According to a study made by UNICEF in 2005, in collaboration to the Ministry of Health and "Alfred Rusescu" Institute for Mother and Child Care (Bucharest), entitled "Nutritional Status of the Pregnant woman and of the children under 5 years old and school children of 6–7 years old", there were drawn the following conclusions:

1. Regarding the ethnicity, Table 2 highlights that the percentage of Gypsy women is 10.7%, which means it is five times bigger than the percentage of this ethnic group in the general population. Also, the percentage of women who gave birth to 2nd and 3rd degree children is greater in the Gypsy women than in any other ethnic group (UNICEF, 2005).

Table 2. The distribution of pregnant women by ethnicity

<b>Ethnicity</b>	<b>%</b>
Romanian	79,7
Hungarian	7,9
Gypsies	10,7
Other	1,7

Source: “Nutritional Status of the Pregnant woman and of the children under 5 years old and school children of 6–7 years old”, UNICEF, 2005.

2. As regards the level of education, there has been noticed that almost half of the women graduated more than the compulsory 8 degrees, but at the same time, it is worrying to notice the great percentage (at least 8.8%) of women who did not attend the compulsory 8 degrees (Table 3).

Table 3. The distribution of pregnant women by level of education

<b>Level of education</b>	<b>%</b>
< 5 degrees	8,8
5-8 degrees	23,4
9-12 degrees	48,5
12 degrees	18,2
no reply	1,1

Source: “Nutritional Status of the Pregnant woman and of the children under 5 years old and school children of 6–7 years old”, UNICEF, 2005.

3. The social-economic level of each family was considered by taking into account a social and economic indicator. According to this indicator, the group under study is distributed as seen in Table 4. On the whole, more than one third of the women are ranked in the low and very low level, but almost half of them fall into the category of a high social and economic level.

Table 4. Distribution of pregnant women after the social-economic indicator

<b>The socio-economic level</b>	<b>%</b>
Very low	12,2
Low	17,6
Average	24,2
High	46

Source: “Nutritional Status of the Pregnant woman and of the children under 5 years old and school children of 6–7 years old”, UNICEF, 2005.

In the towns, more than 63% of the women are ranked into the high level, while in the countryside; their percentage goes slightly over 30%. As for the women included in the very low and low level, the differences between the two environments are important. The use of prenatal care is estimated in two ways. By appreciating the right use and respectively by using the prenatal care services and for this there has been taken into accounts the number of examinations during pregnancy, as well as the moment when the pregnant woman first registered for prenatal care. Related to the moment when the pregnant woman registered for prenatal care, there has been noticed that most pregnant women went to the first prenatal examination during the second (34.6%) and the third month (23.4%) of pregnancy. The percentage of pregnant women which go to the first prenatal examination during the first trimester of pregnancy is 79.2% in the towns and 58.5% in the countryside. As regards the number of prenatal examinations during the pregnancy, the literature in the field mentions 4 examinations as the limit of under-use, in comparison to 10 examinations recommended. The level of education differentiates mothers to a great extent. More than 90% of the mothers who graduated 12 grades were registered to a doctor during the first pregnancy trimester, in comparison to only 38.6 % of the mothers who attended less than 5 grades (UNICEF, 2005).

Even though most infants belonged to families with both parents present, with a small number of children, the countryside origin associated to a low level of education and the status of unemployed mother explains the reason why the low social and economic status is the main risk factor for malnutrition (Yoo *et.al.*, 2013). Another important aspect is the lack of support from the husband and lack of help with the household work. This issue with a direct and negative effect on the working conditions and on the birth weight shows that the mothers who do not receive any help from their partners present a higher risk to give birth to a low weight new-born. It seems that the family and social support protect the person against the stressful events in life and act as a cushion mechanism and entail the mother's well-being. The lack of support and help from the husband during this period, as well as continuing the mother's activities as before the pregnancy is accompanied by a higher incidence of unfavourable pregnancy evolution. (Elsenbruch *et al.*, 2007).

A factor with a major impact is the marital status of the mother. A recent study shows that during the last two decades, Spain has registered a remarkable increase in the number of single mothers, which reflects dissociation between marriage and motherhood. In spite of the considerable influence of the Catholic Church on the education system and the social habits, marriage has lost its traditional status, the importance being shifted to procreation and rising children. Only 30 years ago, children born outside marriages were ostracized; nowadays, almost 1 in 3 births take place outside marriage and the acceptance of „unmarried” families is widespread. Even though the current report on non-marital births is smaller than



that practiced in most countries in the north of Europe, the growing rhythm was quicker in the south-eastern countries. There have been made studies which analysed how and to what degree the mothers' marital status influences the health of their new-born, using the data on the low birth weight as an indicator. Although the birth statistics show that the low birth weight is constantly higher for the unmarried than the married mothers, the social demography is different for these groups and it suggests the need to evaluate the risks on health in various environment types. Thus, the children with unmarried mothers face higher risks for health than those with married mothers, as this is a reflection of the social inequities (Castro-Martín, 2010; Bird *et al.*, 2000; Burstrom *et al.*, 2010; Foster *et al.*, 1998; Hanson, *et al.*, 1995).

In spite of the lack of information regarding the employment status of the mothers, especially in the countries with low incomes, hard work at home as well as at work increases the incidence of unfavourable pregnancy evolution. A study made by Needhammer *et al.* (2009), proved that more than 40 hours of work in a week and shifts increase the risk to low birth weight, to small children for the gestational age (SGA) and preterm labor. It was also noticed that part-time work might prevent these (Niedhammer *et al.*, 2009). Over the years there have been made different studies on the correlation between the maternal age and the incidence of low birth weight (Roth *et al.*, 1998).

## Methods

The main objectives of this research were selection, synthesis, discussion and presentation of the current relationship between the social-economic status and the low birth weight. The study was based on a literature review, including books, published articles and internet resources, as well as on the author's own experience in this field. The research was undertaken in the Department of Paediatric Recovery from "Saint Mary" Children Hospital in Iasi in collaboration to the Department of Primary Care and Epidemiology from "Gr. T. Popa" University of Medicine Iasi. The group under study included 123 infants hospitalised during October 1st 2010 - August 30th 2011. Among the criteria used in order to be included in the study was the low birth weight estimated by using the anthropometrical indicators recommended by WHO, the Z score. There have been applied the deontological regulations for research by including the children in the study group only after the approval was given by the legal caregivers while being fully informed. We created a form using accessible language which included the data on the purpose, methodology and the reduced risk presented by the study, as well as the benefits which arise from taking part in it, offering the guarantee that the obtained results are confidential. The information about the factors which might be favourable to prematurity and consequently to low birth weight was

taken from the hospital medical files and they were included in the data base. Regarding the mother, there were analysed the following details: the family environment, the social and economical level, education level, job, previous obstetrics conditions. The anamnesis data, the anthropometrical data as well as the values estimated for the Z score were introduced into an Excel data base. This data base was imported and processed using SPSS 16 and EpiInfo 3.5.2. (17th of December 2010). There were used descriptive statistics, statistics tests ( $\chi^2$ , t-student, Fisher), the environment types were compared to those from ANOVA statistics, there were made correlations, liniar and logistical regressions, on a significance level of 5% and a reliability percentage of 95.

## Results

The patients included in the study group were hospitalised at ages between 5 and 48 weeks. In the analysis of their ranking in age groups (5-12 weeks, 13-24 weeks, 25-36 weeks, 37-48 weeks) we noticed the change in the anthropometrical indexes especially in infants aged between 5 to 24 weeks (99 infants – 80.47%). The difference between this age group and the age groups 25-36, respectively 37-48 weeks was significant from the statistical point of view ( $p = 0.01 \times 10^{-5}$ ), for each of them there were registered only 16 and respectively 8 infants (13%, respectively 6.53%). The group under study included mostly female infants (69–56.1% versus 54–43.9% males), but the difference is insignificant from the statistical point of view ( $p = 0.074$ ).

Most infants came from the countryside (99 infants –80.5%), from families with a low social-economic level (118 infants– 95.93%,  $p < 0.01 \times 10^{-5}$ ), with 1-4 children (91 infants –73.98%,  $p < 0.01 \times 10^{-5}$ ), with both parents present in more than half of the cases (68 infants–55.28%). The correlations between the social-economic level, the marital status and the mothers' parity were not significant from the statistical point of view ( $r = - 0.1$ , respectively  $r = 0.2$ ).

Most of the infants (82-66.66%,  $p < 0.01 \times 10^{-5}$ ) came from mothers of low education (illiterate and elementary studies), unemployed (113 -91.87%,  $p < 0.01 \times 10^{-5}$ ).

Table 5. *Distribution of the group under study depending on the mother's level of education*

<b>Educational level</b>	<b>%</b>
Illiterate	28.45
Elementary	38.21
Medium	31.7
Superior	1.64

The age of the mothers ranked between 21 and 40 in 94 infants (76.42%), and for 29 (23.58%) it was smaller than 20, the difference between the two age groups being significant from the statistical point of view ( $p = 0.04$ ). The pregnancies were kept under observation in 76 cases (61.79%), the difference between the ones completely out of observation (47-38.21%) being significant from the statistical point of view ( $p = 0.03 \times 10^{-2}$ ). The average hospitalisation period for the group under study was 34.69 days (with variations in between 12-69 days), and during this time, the average weight increase was 960.16 g and an average length increase of 3.01cm and between these factors there is a strong positive correlation ( $r = 0.88$ , respectively  $r = 0.86$ ). The study of the Z score when entering and leaving the hospital highlighted an improvement in their average values from  $-4.11$  to  $-3.34$  in case of age weight, from  $-2.77$  to  $-2.36$  in case of length and from  $-1.41$  to  $-0.66$  in case of weight. The correlation between the values of the Z score when entering the hospital and the social and economic level was positive. The correlation was also strong ( $r = 0.87$ ) in case of the Z score for weight and average ( $r = 0.76$ ) in the case of the Z score for age.

## Discussion

The poor social and economic conditions from our country lead to a high percentage of low birth children who require attention and recovery in specialised units. We have noticed in the infants included in the study that both genders are affected, in an approximately equal percentage. As regards the age, the most affected group due to the low birth weight was the one aged between 5 to 24 weeks, the main reason being the errors made in their nutrition habits during the first 6 months of life. In our study we noticed that the percentage of mothers younger than 20 is high as well as that of pregnancies without medical observation, and this is actually an alarming fact related to the reduced medical services required.

Under-age mothers represent an important aspect in this issue, as the connection between under-age mother and premature birth is well-known (Restrepo-Mendez, *et al.*, 2014). According to a study by WHO published in September 2014, approximately 16 million girls aged between 15 and 19 and approximately 1 million girls under 15 give birth every year, and most of them come from countries with small and average income. The complications during pregnancy or at birth are the second cause of death for the girls aged between 15 and 19 worldwide. Every year, approximately 3 million girls aged between 15 and 19 suffer abortions under insecure conditions. The children born from under-age mothers face a substantially higher risk to die than those whose mothers are 20 – 24 years old (WHO, 2014).

Among the factors which lead to this great number of under-age mothers are poverty, sexual violence, lack of information and education and even marriage at very young ages. In certain countries, girls are used as an exchange coin to strengthen alliances, to pay family debts, thus marriages between children take place. Some families might wish to ease from the “burden of a girl. “In extreme cases, they even want to earn money by selling the little girl mentions the UN report. In spite of the efforts made worldwide to end this scourge (marriages at very young ages), one in three girls from the developing countries gets married before she turns 18. Girls who are younger than 15 present a high risk of eclampsia, anaemia, postpartum haemorrhage and puerperal endometritis (uterine infection). The girls who are not completely physically grown-up present a higher risk to have a prolonged labor and this might lead to vaginal fistula (a pathological passage between the vagina and the bladder). This fistula can cause the death of the infant and give long-term urinary disorders for the mother. Even though most births among under-age mothers appear in the developing countries, the developed countries are not completely devoid of this phenomenon. Almost 5% of the adolescent mothers (680,000 out of 13.1 million) come from developed countries. Even in the countries which had small numbers of teenage mothers, the ethnic minorities and the sidelined groups include a big number of young mothers. In Serbia, the rate of births among young mothers in the Romani community is six times higher than the average in the country. In Bulgaria, half of the Romani girls give birth before they turn 18 and this fact highlights certain discrimination problems, imposed marriages between children and lack of medical care, including sexual education, notes adevărul.ro. (Stan, 2013).

The UNICEF statistics show that Romania is on the first position among the European countries with births among under-age girls. More precisely, “four mothers in one hundred are younger than 18 when they become mothers”, notes adevărul.ro. Even more serious is the fact that our country presents a growing trend as Romania is also the only country where the number of parent-children increases every year (Adevarul, 2012). There has been noticed that abuse in childhood has been a strong predictor for drug use during high school. The most

important detail is that the women who used drugs during high school present even more chances to smoke and drink alcohol during the pregnancy afterwards. In Romania, the number of infants who die during their first months is double than the European Union average. Every year, in our country die more than 2,000 children aged less than one year. The rate of preterm births, a major factor of infant mortality, in Romania goes up to 9%, which is double than the rate in other European countries. Every year, there are registered more than 20,000 pre-term and low birth weight new-born infants. Prematurity and its side effects are responsible for more than half of the neonatal deaths. One third of them could be easily prevented by endowing the maternity hospitals with proper equipment and developing support programs for mothers and children (Save the Children Romania, 2014). The official data of the National Statistics Institute show that in 2009, out of the total of 222,388 born children, 17,383 weighed less than 2,500 grams and 10,635 children had a gestational age smaller than 36 weeks (National Statistics Institute, 2009). According to this study, even though most infants were born in maternity hospitals, and mostly in natural birth, we consider that the percentage of births taking place outside the hospital units (13%) is rather high, in comparison to the percentage of 2% on national level (The Ministry of Health, World Bank, UNFPA, USAID, UNICEF. 2005), which is due to the low education level and the reduced medical education. More than half of the infants included in the group under study were prematurely born and required a complex treatment during the perinatal period, which confirms the data gathered from the literature in the field according to which premature birth and low birth weight are factors in favour of malnutrition and other associated medical conditions (Duggan *et al.*, 2008).

At the hospital discharge, the values of the Z score for age weight and length improved significantly, by obtaining a considerable average increase (960.16 g) for an average hospitalisation period of 34.69 days. The values of the Z score for age length recorded smaller growth, even though the average increase in length (3/01cm) corresponded to the hospitalisation period, as the length was less influenced by malnutrition. Obtaining improved values for these anthropometrical indicators in the hospital discharge moment underlines the importance of meeting the minimum conditions for development during the uterine period, while for the infant period; it shows the importance of proper nutrition according to age and weight. Education contributes to the fight against poverty. The people who have been educated not only that has greater chances to find a job, but also have greater chances to keep a stable job and be decently paid. Especially for women, education contributes to the combat against inequity of chances and wages on the labor market. Apart from the fact that it has an important contribution to change the state of poverty in many households, education prevents them from entering poverty. The mother's education with a direct and positive effect on the working conditions and birth weight shows that a higher level of education ensures a better birth weight. This conclusion comes to support the results of many studies.

Educated mothers can have better jobs and better wages. Also, they benefit from pre-birth care and a better nutrition. All these conditions help the child to have a proper weight at birth and optimum development conditions (Chevalier & O'Sullivan, 2007). The families with a disadvantaged social and economical level experience malnutrition, inadequate checking during pregnancy, smoking and drinking alcohol, repeated pregnancies, stress and all these lead to pre-term birth, restrictions in the uterine development, low birth weight. (Zarbakhsh Bhari *et al.*, 2012). The prenatal social support is associated to a corresponding weight at birth, more due to the uterine development than reaching the gestational age (Feldman *et al.*, 2000). Education contributes to decreasing the number of conflicts and discrimination. In the African countries, in the south of Sahara, the risk of conflict appears in the areas with the greatest inequalities in education. The girls who go to school have a bigger self-esteem and are less exposed to the risk of becoming victims of violence or exploitation (Save the Children Romania, 2011).

## Conclusions

As can be seen from the publications and evidences discussed in this review, the birth weight is one of the most important indicators of a mother's health in both developed and developing countries. Literature in the field presents it as a major factor in establishing the vital prognosis and later development of the child. Low birth weight is considered a risk factor for the development of malnutrition, recurrent infections and neuro-psychic deficiencies. The main risk factor involved in the development of low birth weight was the low social-economic level, without diminishing the importance of other risk factors. The newborns with low birth weight are predisposed to the development of many diseases, the most common being malnutrition. Therefore, we consider important to tackle malnutrition not only medically but also socially because if infants return to the same family environment this leads to recurrent malnutrition, being disadvantaged by maintaining a vicious circle. This study highlights the need to improve primary health care and involving different factors could cause an improvement in the social-economic conditions, particularly in rural areas. After having reviewed these data, we consider it opportune for Romania to update the statistics in order to have more data which would help in establishing certain examining procedures, to raise the education level for health care and give access to information, aiming to decrease the number of low-birth weight infants.

## References

- Adevărul.ro, FENOMENUL mamelor minore. România ocupă primul loc în Europa, (2012). FENOMENUL mamelor minore. România ocupă primul loc în Europa, [http://adevarul.ro/news/societate/fenomenul-mamelor-minore-romania-ocupa-loc-europa-1\\_50ae98d87c42d5a6639e4aa1/index.html](http://adevarul.ro/news/societate/fenomenul-mamelor-minore-romania-ocupa-loc-europa-1_50ae98d87c42d5a6639e4aa1/index.html)
- Bird, S.T., Chandra, A., Bennett, T., & Harvey, S.M. (2000). Beyond marital status: Relationship type and duration and the risk of low birth weight. *Family Planning Perspectives, 32*(6), 281-287.
- Burstrom, B., Whitehead, M., Clayton, S., Fritzell, S., Vannoni, F., & Costa, G. (2010). Health inequalities between lone and couple mothers and policy under different welfare regimes: The example of Italy, Sweden and Britain. *Social Science & Medicine, 70*(6), 912-920.
- Castro-Martín, T. (2010). Single motherhood and low birthweight in Spain: Narrowing social inequalities in health? *Demographic research 22*(27), 863-890.
- Chevalier, A., & O'Sullivan, V. (2007). Mother's education and birth weight: *IZA Discussion Papers, 2640, 2-42*.
- Duggan, C., Watkins, J.B., & Walker, W.A. (2008). Nutrition in pediatrics: basic science, clinical applications, Third Edition, International Print-O-Pac Ltd.
- Elsenbruch, S., Benson, S., Rucke, M., Rose, M., Dudenhausen, J., Pincus-Knackstedt, M.K., et al. (2007). Social support during pregnancy: effects on maternal depressive symptoms, smoking and pregnancy outcome. *Human Reproduction, 22*(3), 869-877.
- Feldman, P.J., Dunkel-Schetter, C., Sandman, C.A., & Wadhwa, P.D. (2000). Maternal social support predicts birth weight and fetal growth in human pregnancy. *Psychosomatic Medicine. 62*(5), 715-725.
- Florescu, L., Temneanu, O., Mîndru, D. (2014). Tendințe actuale în alimentația și îngrijirea prematurului și a copilului cu greutate mică la naștere. *Revista Română de Pediatrie, LXIII*(3), 238-308.
- Foster, E.M., Jones, D., & Hoffman, S.D. (1998). The economic impact of nonmarital childbearing: How are older, single mothers faring? *Journal of Marriage and the Family 60*(1), 163-174.
- Goldenberg, R.L., & Culhane, J.F.(2007). Low birth weight in the United States. *American Journal Clinical Nutrition, 85, 5845-5905*.
- Hanson, S., Heims, M.L., Julian, D.J., & Sussman, M.B. (1995). Single Parent Families: Diversity, Myths and Realities, *20*(1/2), 283-304.
- Health at a Glance: Europe 2012 (2012). *Infant health: Low birth weight*, ECD Publishing.
- Health at a Glance 2011: OECD Indicators, Infant health: Low birth weight, (2011). Infant health: Low birth weight [www.oecd-ilibrary.org/sites/health\\_glance-2011en/01/08/index.html?itemId=/content/chapter/health\\_glance-2011-11-en](http://www.oecd-ilibrary.org/sites/health_glance-2011en/01/08/index.html?itemId=/content/chapter/health_glance-2011-11-en)
- IPH, Health inequalities and low birth weight, (2010). Health inequalities and low birth weight [www.publichealth.ie/healthinequalities/healthinequalitiesandlowbirthweight](http://www.publichealth.ie/healthinequalities/healthinequalitiesandlowbirthweight)
- Kamali, F.M., Sehati Shafaei, F., & Gojazadeh, M. (2010). The effect of life style on the rate of preterm birth. *Iranian Journal of Ardabil University of Medical Sciences, 10*(1), 55-63.



- Mahmoodi, Z., Karimlou, M., Sajjadi, H., Dejman, M., Vameghi, M., & Dolatian, M. (2013). Working Conditions, Socioeconomic Factors and Low Birth Weight: Path Analysis. *Iranian Red Crescent Medical Journal*, 15(9), 836-42.
- Ministerul Sănătății, Banca Mondială, UNFPA, USAID, UNICEF. (2005) *Studiul Sănătății Reproductive: România, Raport sintetic*, Buzău: Alpha MDN.
- NationMaster, Low birth weight: countries compared, (2000). Low birth weight: countries compared [www.nationmaster.com/country-info/stats/Health/Births/Low-birth-weight](http://www.nationmaster.com/country-info/stats/Health/Births/Low-birth-weight)
- NCHS (2011). *National Vital Statistics Reports*, 62(1), 18-38.
- Niedhammer, I., O'Mahony, D., Daly, S., Morrison, J.J., Kelleher, C.C. (2009). Occupational predictors of pregnancy outcomes in Irish working women in the Lifeways cohort. *British Journal of Obstetrics and Gynaecology*, 116(7), 943-952.
- OECD (2013). Health at a Glance, OECD Indicators.
- Ohlsson, A., & Shah, P. (2008). *Determinants and prevention of low birth weight: a synopsis of the evidence*. Institute of health economics Alberta Canada, 97-127.
- Restrepo-Méndez, M.C., Lawlor, D.A., Horta, B.L. Matijasevich, A., Santos, I.S., Menezes, A.M., Barros, F.C., Victora, C.G. (2014). The Association of Maternal Age with Birthweight and Gestational Age: A Cross-Cohort Comparison. *Paediatric and Perinatal epidemiology*, Article published online: 18 nov 2014.
- Roth J., Hendrickson J., Schilling M., Stowell D.W. (1998). The Risk of Teen Mothers Having Low Birth Weight Babies: Implications of Recent Medical Research for School Health Personnel, *Journal of School Health*, 68(7), 271-275.
- Stan A. (2013). ONU avertizează: sunt prea multe mame adolescente în lume. ONU avertizează: sunt prea multe mame adolescente în lume, [http://adevarul.ro/sanatate/medicina/onu-avertizeaza-multe-mame-adolescente-lume-1\\_52715da7c7b855ff569b4035/index.html](http://adevarul.ro/sanatate/medicina/onu-avertizeaza-multe-mame-adolescente-lume-1_52715da7c7b855ff569b4035/index.html)
- Save the Children Romania (2014). <http://salvaticopiii.ro/?id2=0002000200030000>
- UNICEF (2005). Statusul nutritional al femeii gravide. <http://www.unicef.org/romania/ro/GRAVIDA.pdf>
- WHO. (2004). Low birthweight Country, regional and global estimates, <http://www.who.int/reproductivehealth/publications/monitoring/9280638327/en/>
- WHO. (2014). Preterm birth. <http://www.who.int/mediacentre/factsheets/fs363/en/>
- WHO (2014). Adolescent pregnancy. <http://www.who.int/mediacentre/factsheets/fs364/en/>
- Yoo, S.D., Hwang, E.H., Lee, Y.J., Park, J.H. (2013). Clinical Characteristics of Failure to Thrive in Infant and Toddler: Organic vs. Nonorganic. *Pediatric Gastroenterology Hepatology Nutrition*, 16(4), 261-268.
- Zarbakhsh, B.M.R., Hoseinian, S., Afrooz, G., & Hooman, H. (2012). The Comparison Of Many Biological Characteristics, Economical Conditions, General Health (Mental), Of Mothers With Low And Normal Birth Weight At Guilan Province. *Payavard Salamat*, 5(5), 67-78.