

## **The impact of poverty on the position of vulnerable groups in healthcare – a retrospective study of cases of pregnant women and newborns**

### **Abstract**

The multidimensionality and complexity of the phenomena of poverty and health, in this paper, are focused on the research of the impact of poverty on the position of pregnant women and newborns, the already existing vulnerable groups in healthcare. The impact of poverty on the health of pregnant women and newborns requires research on content-methodological perspectives in two scientific fields. The first is the field of biomedicine and healthcare, in which objective facts should be found that prove the impact of poverty on the medical condition of pregnant women and newborns. For this purpose, the results of the research of papers published in the medical database PUBMED, which have connected two keywords: pregnancy and poverty in their titles over the past five years, will be researched, presented, and analysed. The second field is the field of social sciences and humanities that, due to the nature of their definition, should direct health professionals to find an approach that will express moral activity towards pregnant women and newborns in conditions of poverty. In order to achieve this objective, the results of the research of papers published in the Journal of Poverty, which have also linked two keywords: pregnancy and poverty in their titles over the past five years, will be researched, presented, and analysed.

### **1. Introduction**

Theoretical and practical testing of well-known definitions of health forms the foundation of questioning the relationship between poverty and health. The first definition is of the World Health Organisation that defines health as a »state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity«. The second definition of health, which originates from the 1978 Declaration of the WHO in Alma-Ata, proclaims that health is »a state of complete physical, mental, spiritual and social well-being«. Follow-

ing these definitions, the relationship between poverty and health belongs to the content and methodological scope of those sciences whose theoretical knowledge and results of empirical research offer solutions that would, ideally, eliminate, but realistically, reduce the impact of poverty on health as much as possible. At the same time, the examples from the practical life, such as those mentioned in the article, indicate that poverty and health are the main part of some social and civic approaches and perspectives, such as religious, ideological, political, ethical, educational, artistic, media, etc. Following these considerations, this article will fulfil its theoretical and practical purpose, i.e. the reasons for its emergence, if it a) additionally sensitises professionals, responsible for solving this relationship, and the public to address the situations and problems that arise due to poverty in the field of biomedicine and healthcare. And b) if it points out that while creating practical solutions, different meanings and perceptions of poverty should be taken into account on the individual, professional, institutional, political, and broader social level.

## 2. The impact of poverty on the medical condition of pregnant women and newborns

Under this subtitle, presented and analysed will be the results of the research on papers published in the PUBMED medical database, which in the last five years in their titles have linked the word poverty to at least one of the following words: pregnancy, pregnant woman, breastfeeding, newborns, and infants. In the past five years, the connection of these words has been found in 17 titles of articles published in this medical database. The research was limited to the selection and analysis of those articles with free access to the entire texts. Therefore, this paper presents the research results published in the 17 mentioned articles. Chronologically, the largest number of articles (7) was published in 2015; four articles were published in 2019, four articles in 2016 and 2020 (two in each year), and one in 2017 and 2018. The research interest of the authors in 2015 was directed to the following topics: racial/ethnic disparities and symptoms of depression among pregnant women living in different types of poverty. The topic was introduced and explained by the authors from the field of family

medicine and social work from the USA<sup>1</sup>; experiences of the urban healthcare institutions and services with poverty in pregnancy in South Africa<sup>2</sup>. The authors from the fields of public health, health policy and reproductive health from Africa expressed the interest in this topic; poor sanitary/hygienic conditions linked to adverse pregnancy outcomes in rural India. This topic was addressed by the authors from the field of public health from India and the USA, and an author from the field of infectious and tropical diseases from the United Kingdom<sup>3</sup>; a comparative overview of providing health services to poor pregnant women in rural areas of the two Indian countries, Gujarat and Tamil Nadu, was presented by an Indian author and researcher from the Institute of Public Health<sup>4</sup>; the protocol for the evaluation of a free health insurance for pregnant women from the poor Mbeya region in Tanzania was introduced in co-authorship by the scientists in the field of public health and sanitation and tropical medicine, the first from Tanzania and the second from England<sup>5</sup>; juvenile pregnancies; maltreatment, children negligence and poverty were linked in the work of American authors from two fields, paediatrics – the Department of Adolescent Medicine and the Department of Social Work<sup>6</sup>; childbirth outcomes in conditions of poverty were re-

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<sup>1</sup> Catherine Cubbin, Katherine Heck, Tara Powell, Kristen Marchi, Paula Braveman: Racial/Ethnic Disparities in Depressive Symptoms Among Pregnant Women Vary by Income and Neighborhood Poverty. In: *AIMS Public Health* 2 (2015), pp. 411–425.

<sup>2</sup> Fiona Scorgie, Duane Blaauw, Tessa Dooms, Ashraf Coovadia, Vivian Black, Matthew Chersich: »I get hungry all the time«: experiences of poverty and pregnancy in an urban healthcare setting in South Africa. In: *BMC Globalization and Health* 11 (2015), <https://doi.org/10.1186/s12992-015-0122-z>.

<sup>3</sup> Bijaya K. Padhi, Kelly K. Baker, Ambarish Dutta, Oliver Cumming, Matthew C. Freeman, Radhanatha Satpathy, Bhabani S. Das, Pinaki Panigrahi: Risk of Adverse Pregnancy Outcomes among Women Practicing Poor Sanitation in Rural India: A Population-Based Prospective Cohort Study. In: *PLoS Medicine* 12 (2015), <https://doi.org/10.1371/journal.pmed.1001851>.

<sup>4</sup> Kranti Suresh Vora, Sally A. Koblinsky, Marge A. Koblinsky: Predictors of maternal health services utilization by poor, rural women: a comparative study in the Indian States of Gujarat and Tamil Nadu. In: *BMC Journal of Health, Population and Nutrition* 33 (2015), <https://doi.org/10.1186/s41043-015-0025-x>.

<sup>5</sup> Josephine Borghi, Kate Ramsey, August Kuwawenaruwa, Jitihada Baraka, Edith Patouillard, Ben Bellows, Peter Binyaruka, Fatuma Manzi: Protocol for the evaluation of a free health insurance card scheme for poor pregnant women in Mbeya region in Tanzania: a controlled-before and after study. In: *BMC Health Services Research* 15 (2015), <https://doi.org/10.1186/s12913-015-0905-1>.

<sup>6</sup> Sarah K. Garwood, Lara Gerassi, Melissa Jonson-Reid, Katie Plax, Brett Drake:

searched and presented by the American authors of general medicine<sup>7</sup>. In 2016, the topics were published on: the impact of poverty on the weight of pregnant women and foetal growth. The American authors, experts in the field of public health, epidemiology, from the Department of Health and Nutrition Sciences, the Centre for Research on Healthcare, and the Departments of Obstetrics, Gynaecology and Reproductive Sciences researched the topic<sup>8</sup>; a similar topic, only with the sign of obesity in African American pregnant women, has been explored by the American scientists in the fields of public health, nursing, epidemiology and of the division of sleep disorders<sup>9</sup>. In 2017, paediatricians, psychiatrists, psychologists, and public health researchers published a paper on how and to what extent nutrition of poor pregnant women affects the cognitive development of a child.<sup>10</sup> In 2018, the interest of scientists was focused on the following topics: perinatal and neonatal pregnancy outcomes in a low-income environment. This topic was jointly explored by the English researchers in the fields of reproductive health, infectious diseases, epidemiology and healthcare, and a scientist from the Malawi University of Science and Technology<sup>11</sup>; the other topic in this year linked poverty to pre-term birth and cognitive development of a baby. The epidemiologists, representatives of the behavioural sciences and health education, all

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More than Poverty: The Effect of Child Abuse and Neglect on Teen Pregnancy Risk. In: *Journal of Adolescent Health* 57 (2015), pp. 164–168.

<sup>7</sup> Rita Hamad, David H. Rehkopf: Poverty, Pregnancy, and Birth Outcomes: A Study of the Earned Income Tax Credit. In: *Paediatric and Perinatal Epidemiology* 29 (2015), pp. 444–452.

<sup>8</sup> Dara D. Mendez, Roland J. Thorpe, Ndidi Amutah, Esa M. Davis, Renee E. Walker, Theresa Chapple-McGruder, Lisa Bodnar: Neighborhood racial composition and poverty in association with pre-pregnancy weight and gestational weight gain. In: *SSM – Population Health* 2 (2016), pp. 692–699.

<sup>9</sup> Andrea E. Cassidy-Bushrow, Rosalind M. Peters, Charlotte Burmeister, Lawrence F. Bielak, Dayna A. Johnson: Neighborhood-Level Poverty at Menarche and Prepregnancy Obesity in African-American Women. In: *Journal of Pregnancy Volume* 2016, <https://doi.org/10.1155/2016/4769121>.

<sup>10</sup> Betty R. Vohr, Elysia Poggi Davis, Christine A. Wanke, Nancy F. Krebs: Neurodevelopment: The Impact of Nutrition and Inflammation During Preconception and Pregnancy in Low-Resource Settings. In: *Pediatrics* 139 Suppl. 1 (2017), pp. 38–49.

<sup>11</sup> Jennifer A. Hall, Geraldine Barrett, Andrew Copas, Tambosi Phiri, Address Malata, Judith Stephenson: Reassessing pregnancy intention and its relation to maternal, perinatal and neonatal outcomes in a low-income setting: A cohort study. In: *PLoS One* 13 (2018), <https://doi.org/10.1371/journal.pone.0205487>.

from the USA, examined the topic.<sup>12</sup> In 2019, pregnancy outcomes, health and life of newborns were connected by four contents. In order: the American scientists in the field of population health sciences published a paper on different conditions of poverty in urban-rural areas and mortality of infants and children living in poverty<sup>13</sup>; a retrospective study on the impact of poverty on infant mortality from 2000 to 2017 was published in co-authorship by English researchers in the field of public health and policy, from the School of Geography, and the Institute of Health and Society, together with an epidemiologist from Denmark<sup>14</sup>; an article on insomnia, short-term sleep in pregnancy associated with disparities related to poverty was co-authored by the American scientists in the field of sleep disorders, obstetrics and gynaecology, psychiatry, and neurology, and an Italian author in the field of neuroscience and psychiatry<sup>15</sup>; the American paediatricians of general and behavioural paediatrics investigated insecurity of nutrition during pregnancy and breastfeeding in low-income mothers of Hispanic descent<sup>16</sup>. In 2020, the interest of American medical scientists, gynaecologists and psychologists, was focused on the interaction between poverty and cardio-metabolic disorders, and the postpartum cardio-metabolic risk was questioned in different racial/ethnic groups.<sup>17</sup>

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<sup>12</sup> Jennifer L. Beauregard, Carolyn Drews-Botsch, Jessica M. Sales, W. Dana Flanders, Michael R. Kramer: Preterm Birth, Poverty, and Cognitive Development. In: *Pediatrics* 141 (2018), <https://doi.org/10.1542/peds.2017-0509>.

<sup>13</sup> Yousra A. Mohamoud, Russell S. Kirby, Deborah B. Ehrenthal: Poverty, urban-rural classification and term infant mortality: a population-based multilevel analysis. In: *BMC Pregnancy and Childbirth* 19 (2019), <https://doi.org/10.1186/s12884-019-2190-1>.

<sup>14</sup> David Taylor-Robinson, Eric T. C. Lai, Sophie Wickham, Tanith Rose, Paul Norman, Clare Bamba, Margaret Whitehead, Ben Barr: Assessing the impact of rising child poverty on the unprecedented rise in infant mortality in England, 2000–2017: time trend analysis. In: *BMJ Open* 9 (2019), <http://dx.doi.org/10.1136/bmjopen-2019-029424>.

<sup>15</sup> David A. Kalmbach, Philip Cheng, Roopina Sangha, Louise M. O'Brien, Leslie M. Swanson, Laura Palagini, Luisa F. Bazan, Thomas Roth, Christopher L. Drake: Insomnia, Short Sleep, And Snoring In Mid-To-Late Pregnancy: Disparities Related To Poverty, Race, and Obesity. In: *Nature and Science of Sleep* 11 (2019), pp. 301–315.

<sup>16</sup> Rachel S. Gross, Alan L. Mendelsohn, Mayela M. Arana, Mary Jo Messito: Food Insecurity During Pregnancy and Breastfeeding by Low-Income Hispanic Mothers. In: *Pediatrics* 143 (2019), <https://doi.org/10.1542/peds.2018-4113>.

<sup>17</sup> Kharah M. Ross, Christine Guardino, Christine Dunkel Schetter, Calvin J. Hobel: Interactions between race/ethnicity, poverty status, and pregnancy cardio-metabolic

After presenting the contents that linked poverty, pregnancy, the health of pregnant women, newborns, and infants, which were researched in the field of biomedicine and healthcare, we emphasise the key results obtained by researchers, which unequivocally prove the thesis stated in the title that pregnant women and newborns are particularly vulnerable groups in conditions of poverty. The results show that care for the health of pregnant women, future mothers, and newborns should begin in girls before the onset of their first menstrual period (menarche). Living in poverty during that time can significantly affect the reproductive health of the future pregnant woman. Juvenile pregnancies related to poverty often result in the abuse and neglect of newborns, phenomena to which juvenile pregnant women themselves were exposed during childhood. Additionally, particular attention should be paid to the sanitary conditions in which poor pregnant women live because poor sanitary conditions can affect childbirth outcomes and safe motherhood. Furthermore, it is evident that depression is more common in pregnant women living in medium- or low-poverty environment/neighbourhoods. Prejudice about maternal nutrition during pregnancy, according to which a pregnant woman should be eating for two, raises the risk of obesity more in poor pregnant women than in those who are not poor. Malnutrition in a pregnant woman as a consequence of poverty affects the physical and mental health of the pregnant woman and the foetus, often resulting in preterm infants or infants with restricted growth. In the later period of a child's development in childhood and adolescence, as a consequence of malnutrition, psychological diagnoses, attention deficit, hyperactivity, anxiety, and depression may appear. Children born prematurely or in an earlier period have a tendency to achieve lower cognitive assessments in comparison to full-term children. Cognitive assessments were also lower in children born into a poor environment/family. Furthermore, infant mortality is directly related to the growing rate of poverty. It has been estimated that the increase in infant mortality in England between 2014 and 2017 was linked to an increase in child poverty, and it is suggested that about a third of the increase in infant mortality in that period could be attributed to an increase in poor children. Additionally, poverty causes insomnia, sleep problems, and nightmares. Poor maternal nutrition, i. e. insecure

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disorders and maternal postpartum cardio-metabolic risk. In: *Ethnicity & Health* 25 (2020), pp. 1145–1160.

ity in the food availability with high levels of stress in mother, reduces breastfeeding time and limits the healthy diet of newborns and infants. Pregnancy planning, especially in conditions of poverty, significantly affects the health of a pregnant woman, the foetus, and later, the mother, the newborn, and the infant. This is an opportunity in which low-income families can plan the pregnancy to provide the necessary conditions for the pregnancy outcome, and within the appropriate services, obtain timely assistance. Also, mothers from low-income families have shorter maternity leave and stay shorter at home with a child. They return to work earlier due to earnings and full salary. It should be added that employed single mothers earn significantly lower incomes than single fathers. And finally, health systems, policymakers and political officials should take into account that income levels significantly affect the health of pregnant women and newborns, and accordingly provide measures to address the causes that threaten the health of pregnant women and newborns.

Two conclusions can be drawn from the above: 1. medical scientists and practitioners have very clearly highlighted the health issues caused by the conditions of poverty that affect pregnant women, newborns, infants, and mothers, and 2. pointed out that poverty is an issue that transcends the boundaries of medicine and requires the inclusion of sciences and professions that deal with this issue. This was the reason to direct further research on the impact of poverty on pregnancy, breastfeeding, newborns survival, and maternal health to the social sciences and humanities, and among their scientists and practitioners to find solutions for the problems highlighted by scientists and practitioners in the field of biomedicine and healthcare.

### 3. Pregnancy and poverty in socio-humanistic perspectives

The following part of the article will present and analyse the results of a study of articles published in the Journal of Poverty that also in the past five years in their titles linked the word *poverty* with at least one of the following words: pregnancy, pregnant woman, breastfeeding, newborns, and infants. Since this is a journal that also publishes research in the field of health, the intention was to find and actualise those articles that explore the socio-humanistic aspects of the relationship and impact of poverty on pregnancy, breastfeeding, health, and development of newborns. In the study period from 2015 to 2020,

two studies were found. The first is from 2017, in which an American anthropologist actualises and problematises the effect that federal-state policy achieves by promoting breastfeeding and practical responses of women in Southern Indiana to that policy.<sup>18</sup> The second is from 2018, in which American authors from the Faculty of Public Health and the Faculty of Social Work present and analyse critical views on breastfeeding of African-American women living in poverty.<sup>19</sup> The first study does not emphasise the problem of poverty. However, it is significant in that it requires the inclusion of health policy in the design of programs to promote and support mothers who want to breastfeed their children. The second study clearly shows the link between poverty and breastfeeding. The study examined the attitudes and experiences of African American women about breastfeeding while living in conditions of poverty. The sample included African American women because, according to the authors, they breastfeed for a shorter period of time due to poverty and rarely continue breastfeeding after six months to one year of a child's age, despite the recommendations of the American Academy of Paediatrics. Consequently, infants of these mothers have an increased risk of health impairment and twice the risk of mortality compared to infants from other ethnic populations. Although the largest number of surveyed women expressed positive attitudes towards breastfeeding, the authors indicate that this knowledge should also be considered and analysed, taking into account the obstacles that African American breastfeeding mothers face. The first obstacle to breastfeeding, according to the article, needs to be sought and addressed, starting with the historical facts about the unethical relationship to African American women, who were participants in medical research. The authors especially point out the problems of undergoing operative gynaecological procedures without anaesthetics, forced sterilisation that was performed until the 1980s, and the compulsion of African American female slaves to breastfeed their masters' children to the detriment of their own children. To this historical-ethical context that influences building of trust in medicine and medical recommen-

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<sup>18</sup> Rebecca M. Bedwell: The Impact of Federal Breastfeeding Policy Initiatives on Women's Breastfeeding Practices and Attitudes in Southern Indiana. In: *Journal of Poverty* 21 (2017), pp. 508–527.

<sup>19</sup> Rebecca Reno, Sheila Barnhart, Patricia Temple Gabbe: A Critical Inquiry of Breastfeeding Attitudes, Barriers, and Experiences of African American Women Living in Poverty. In: *Journal of Poverty* 22 (2018), pp. 518–536.



dations should also be added poverty, which, as the above research results prove, is an essential and unavoidable factor that impairs the health of pregnant women and the survival of newborns and infants. The second obstacle is that African American women believe less than other women that breastfeeding meets an infant's nutritional needs. Furthermore, the third obstacle is defined by poverty since the breastfeeding rate is significantly lower among poor women and women from low-income families. These obstacles clearly indicate that when designing interventions that would contribute to an increased breastfeeding rate, it is essential to take into account the overall socio-cultural context in which pregnant women, mothers and infants live. Taking this context into account could serve as a starting point for understanding the reasons why poverty affects the health and lives of pregnant women, newborns, and infants. On the other hand, once awareness is made that poverty is a clear and identifiable cause of health problems, medical and health professionals can approach the conceptualisation and provision of professional and ethical care to pregnant women, newborns, and infants that poverty identifies as a vulnerable group of patients.

#### 4. Conclusion

Poverty is one of the most topical issues faced by patients, health professionals and scientists in the field of biomedicine and healthcare. This article exposes poverty as an environment within which and under the pressure of which, health professionals perform their daily activities in the processes of treatment and healthcare. From the presented results of the research on the impact of poverty on the health of pregnant women, life and health of newborns and infants, it can be concluded that this is a topic and issue whose research results, on a theoretical level, contribute to mobilising scientific and other potentials to tackle the issues relating to the interdependence of poverty and health of pregnant women, newborns, and infants. Furthermore, by using methodological approaches, measures can be devised to reduce the impact of poverty on their health. On a practical level, this article can serve as a guide to the following scientific, professional, and social fields: 1. biomedicine and healthcare, for constant critical questioning of the importance of an interdisciplinary approach in addressing the relationship between poverty and health, and especially

the impact of poverty on the creation of a new vulnerable group of patients. Likewise, the results can motivate health professionals to familiarise health officials and policymakers with the extent to which poverty affects the fact that maintaining and protecting the health of pregnant women and newborns depends on the financial situation and the subordinate level of available funds of the health institution. The article can also serve as a proof to health professionals and patients that, in conditions of poverty, the professional and ethical duties of health professionals, in addition to taking care of the most favourable healthcare options, are also focused on the individual abilities of health professionals to find ways to guarantee everyone, and in this particular case pregnant women, newborns, and infants, the right to health and appropriate medical care; 2. in health policy, this article may encourage the creation of measures and policy interventions whose implementation and application in the practice would reduce poverty as a cause of health and life problems for pregnant women, newborns, and infants; 3. in education, due to the planning and implementation of the issue of poverty and health in the curriculum of medical and health faculties to enable students to adequately and creatively address the challenges posed by the impact of poverty on the formation of new vulnerable groups of patients.