



The Role Of Maternal And Child Healthcare In Preventing Child Mortality In Algeria

Farhi Romaissa^{1*}, Yekhlef Souhil²

^{1,2} University of May 8, 1945 Guelma, Algeria, Laboratory of demographic challenges in Algeria, Email : farhi.romaissa@univ-guelma.dz , yekhlef.souhil@univ-guelma.dz

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ABSTRACT

This study aims to identify the role of maternal and child healthcare in reducing child mortality in Algeria by analyzing the health status of mothers and children in the country. It examines the availability of comprehensive medical care for mothers and their children before and after birth, including routine check-ups, health education, vaccination, and other health practices. The study concludes that these practices are essential for maintaining children's health and reducing mortality rates. Furthermore, it emphasizes the need to improve the effectiveness of healthcare services and enhance child health outcomes in the country by strengthening healthcare infrastructure, increasing awareness, and developing appropriate health policies.

Keywords: Maternal and child healthcare, child mortality, health status in Algeria.

Introduction:

Maintaining human continuity, societal stability, and achieving social development necessarily require the preservation of health, which is fundamental to human existence and survival and a crucial condition for life. Health is also one of the key indicators of a nation's progress. Among the most important mechanisms for preserving and ensuring health is healthcare, which is a fundamental pillar of societal development in all its fields. Access to healthcare services is a right for every individual in society, as it revolves around providing individuals with the necessary needs and care concerning their health.

Modern states have given great attention to the issue of healthcare and the necessity of ensuring it for citizens due to its significant importance in maintaining individual and community health. It has become a political commitment enshrined in their constitutions and laws. Healthcare is not limited to a single category; it is an absolute necessity for all segments of society, including women, particularly mothers, men, youth, adolescents, the elderly, and children, who are considered the future leaders and the foundation of families. Among the most important segments of society that require protection of their health and comprehensive healthcare is children. The health of a child depends on the health and well-being of the mother.

Maternal healthcare is one of the key indicators of ensuring the health and safety of both the mother and her unborn child. It is considered the most effective means of protecting mothers and their infants from complications and illnesses that can occur during pregnancy, childbirth, and the postpartum period. Additionally, it is one of the most important tools used by states to reduce maternal and neonatal mortality rates and is a significant component of achieving health development.

Algeria is among the countries that have focused on maternal healthcare, and it has witnessed significant developments through efforts and strategies implemented in the health sector, particularly in maternal and child healthcare. The country aims to develop and promote healthcare services for pregnant women to ensure safe motherhood by providing healthcare facilities and infrastructure for mothers and children and supporting them with specialized personnel to improve maternal and child health, ensuring safe delivery for pregnant women, and protecting and safeguarding the well-being of their newborns.

Therefore, maternal and child healthcare and its effective role in protecting the health of pregnant women and preventing mortality is one of the most significant topics that require extensive research and analysis. This study will explore this issue based on the central question: How does healthcare contribute to maintaining the health of pregnant women and their newborns?

From this primary question, the following sub-questions arise:

- How important is maternal and child healthcare in preventing child mortality in Algeria?
- What are the challenges facing maternal and child healthcare in Algeria?
- What are the main strategies adopted by the Algerian state to improve maternal and child healthcare and prevent child mortality?

To initially address these questions and based on the previous implicit framework, the following hypothesis emerged: Maternal and child healthcare plays an effective and integrated role in preventing child mortality in Algeria.

➤ **Study Objectives:** This study, which focuses on maternal and child healthcare and its importance in preventing child mortality, aims to achieve the following objectives:

- Understanding the importance of healthcare in maintaining the health of pregnant women and their newborns.
- Recognizing the significance of healthcare and establishing health awareness among pregnant women to protect their fetuses and newborns.
- Identifying the importance of caring for maternal and child health as it plays an essential role in ensuring the continuity and survival of societies by preventing child mortality.
- Highlighting the challenges facing maternal and child healthcare in Algeria.
- Clarifying the health status of mothers and children and the main strategies adopted by the Algerian state to improve it.

➤ **Study Methodology:**

The descriptive method has been used as a theoretical approach to investigate the studied topic based on research and studies conducted in this area. The study is divided into two main sections. The first section provides a general overview of maternal and child healthcare, discussing its concept, importance, and main services. The second section focuses on the health status of mothers and children in Algeria, discussing indicators of maternal and child health, challenges facing maternal and child healthcare in Algeria due to social, economic, and urban-rural disparities, and the main strategies adopted by the Algerian state to improve maternal and child healthcare and prevent child mortality.

Section One: Maternal and Child Healthcare

1. Healthcare:

Healthcare encompasses all efforts made by various social systems to maintain health and prevent disease¹. It refers to an integrated set of essential health services and preventive measures provided by the Directorate of Basic Healthcare and its affiliated institutions. The state and government agencies are responsible for establishing these institutions, which include all pharmacies, hospitals, clinics, and medical centers. These institutions, in turn, are staffed with a large number of qualified personnel, such as doctors, nurses, and others, whose primary goal is to provide care and treatment to all members of society in order to improve overall community health and prevent the occurrence and spread of diseases². Healthcare also includes essential components such as health education, maternal and child health programs, reproductive health and family planning, prevention of common diseases and injuries, provision of necessary medications, and raising awareness about healthy nutrition. Therefore, it must be characterized by quality, comprehensiveness, equality, and efficiency³.

2. Levels of Healthcare:

The Ministry of Health has categorized the health services provided to citizens, in general, and to mothers and children, in particular, into three levels. These levels can be summarized in the following table:

Table 01: Represents the levels of healthcare according to the Ministry of Health's classification.

| Level of Healthcare | Responsible Category | Target Group and Purpose |
|---------------------|--|--|
| Primary | Health centers, dispensaries, and clinics, serving as the first point of entry to the health system. | Comprises basic medical staff including doctors, nurses, pharmacists, health inspectors, and licensed midwives. Aims to prevent the onset of disease and promote overall health. |
| Secondary | Comprehensive health centers, government hospitals, and specialist clinics. | Includes general specialists such as general practitioners, general surgeons, obstetricians and gynecologists, and pediatricians, involving a larger medical staff. Provides care after disease onset to detect early-stage conditions, prevent clinical disease development, and avoid complications, particularly for contagious diseases. |
| Tertiary | Specialized medical institutions like hospitals. | Comprises medical and technical staff with specialized expertise and training, along with secondary-level staff. Focuses on providing rehabilitative care and specialized medical and surgical services not available at previous levels. |

Source: The table is prepared by the researcher.

3. Maternal Health care:

Maternal and child healthcare is one of the most crucial aspects addressed by health systems in Algeria due to its significant role in reducing maternal and child mortality rates and preventing pregnancy and childbirth complications. Maternal health refers to the care and attention given to mothers to maintain their physical and mental well-being, starting from the planning stage of pregnancy and extending through the postnatal period. Healthcare aims to provide medical and psychological support to expectant mothers through regular check-ups, health education, and necessary medical interventions. Pregnant women are encouraged to undergo regular health check-ups from the beginning of pregnancy and to continue and adhere to these examinations⁴. They are also provided with the necessary medical awareness to understand the health and well-being of the fetus. Regular pregnancy monitoring through a series of check-ups is essential for both mother and child⁵. Optimal healthcare during pregnancy includes several key components aimed at supporting the health of the mother and fetus, which are as follows:

Components of Maternal Healthcare:

A. Health Education and Pregnancy Preparation: A normal pregnancy lasts between 38-42 weeks⁶, during which women experience behavioral changes accompanied by emotional fluctuations, such as stress, depression, anxiety, insomnia, and mood swings⁷. These changes are attributed to hormonal, psychological, physical, and physiological alterations in a woman's body, leading to a gap in understanding and inconsistency in thoughts and behaviors if the woman is not adequately prepared mentally and psychologically for pregnancy. Therefore, health education, defined as the process of conveying necessary information and skills to help individuals improve their quality of life by changing certain behaviors, becomes essential⁸. It is a fundamental part of pregnancy healthcare, covering awareness about the physical and psychological changes that may occur and the importance of being mentally and physically prepared to accept these changes⁹. It also involves promoting a healthy diet, appropriate exercise, regular medical check-ups, and awareness of warning signs that require immediate medical attention, such as bleeding, severe abdominal pain, or high blood pressure. Effective health education is crucial for applying proper maternal healthcare. Responsible bodies must intensify awareness campaigns to educate pregnant women about taking care of their pregnancies and emphasizing the importance of breastfeeding, which is vital for the healthy growth of the newborn and ensuring a smooth and safe pregnancy and delivery for both mother and child¹⁰.

B. Regular Medical Examinations: Regular medical check-ups are one of the most important elements of healthcare during pregnancy. These examinations, conducted in the three stages of pregnancy, are essential for monitoring the growth of the fetus and the health of the mother. They include general medical checks, such as measuring weight, height, blood pressure, temperature, pulse, and examining the heart, chest, breasts, thyroid, and legs for swelling, as well as abdominal ultrasound examinations in the first trimester to determine uterine height, fetal position, movement, and heartbeat¹¹. In the second trimester, screenings are conducted to detect chromosomal and congenital abnormalities, which are significant health concerns and a clear cause of neonatal morbidity and mortality both globally and in Algeria¹². Regular pregnancy tests, blood and urine tests are necessary to identify any risks of fetal abnormalities or maternal issues that may affect her health or the course of pregnancy, enabling early detection of health problems.

C. Healthy Nutrition: Nutrition plays a crucial role in the health of the mother and fetus during pregnancy, which is a sensitive period in a woman's life, from conception to delivery. The fetus develops in the mother's womb, often accompanied by necessary weight gain for the development of "pregnancy components" such as the fetus, placenta, amniotic fluid, and the growth of maternal and fetal tissues. During this period, the body is in a dynamic state of building, with an ongoing demand for various nutrients, including vitamins, minerals, proteins, and iron. The mother's total energy expenditure increases, and the extent of this increase varies according to each nutrient and stage of pregnancy¹². Many studies suggest that these requirements rise in line with fetal growth. For example, the study by Birch and Sermchou (1969) indicates that severe protein deficiency results in babies with lower intelligence levels, highlighting the importance of protein for the fetal nervous system's development. Therefore, doctors recommend a balanced diet that includes all necessary nutrients to meet the needs of both the mother and her fetus. Poor maternal nutrition and neglect of necessary dietary supplements, such as folic acid and other vitamins prescribed by the doctor, have been linked by many researchers to congenital anomalies in the fetus or delayed cognitive development in the child.

D. Psychological and Social Support: Pregnancy is a sensitive phase during which women may face various psychological and social pressures. Providing the necessary psychological and social support to pregnant women is crucial as it helps reduce stress and anxiety, improves the mother's mental state, and positively impacts fetal health. Social support can be informal or formal. Informal support comes from the husband, family, and other members of the social network, such as friends and neighbors, while formal support comes from the medical staff, including midwives, general practitioners, or other health specialists¹³. Formal support is generally more organized than informal social support and includes educational support on childbirth and motherhood, helping reduce fears and stress associated with pregnancy and childbirth. Medical professionals can refer mothers to mental health services if necessary. All couples are encouraged to participate in these sessions from the beginning of pregnancy, including organized childbirth and parenting preparation

classes, where parents receive support from the organizing midwife, as well as advice and guidance from other experienced parents in attendance¹⁴.

➤ **Maternal Healthcare Services:**

These services are provided by the state and governmental structures to ensure the necessary healthcare for pregnant women throughout the different stages of pregnancy. They can be categorized as follows:

❖ **Healthcare Services During Pregnancy:**

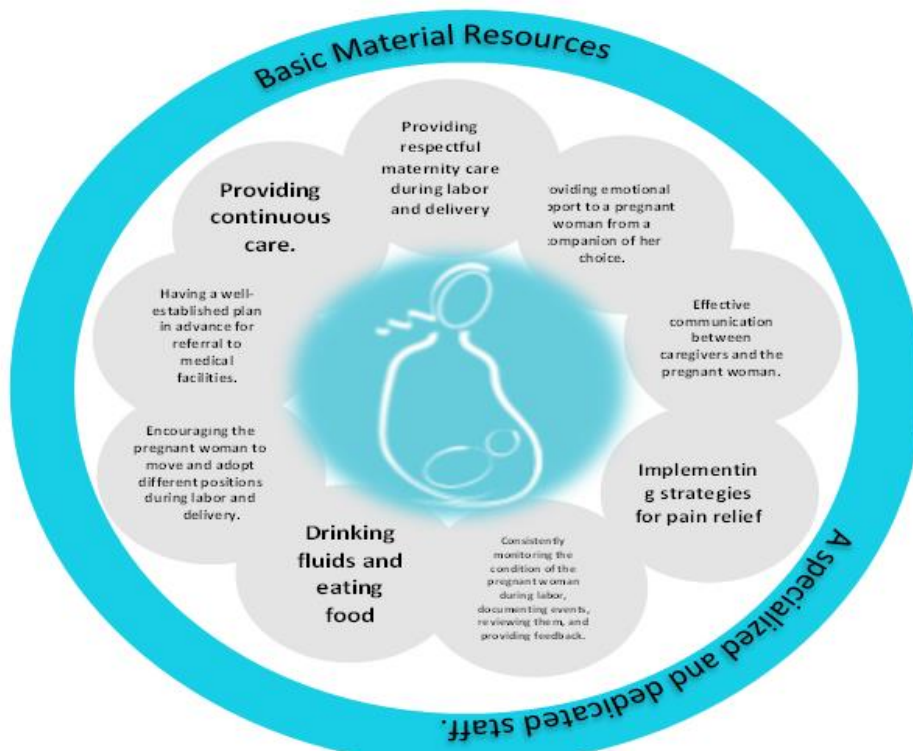
This phase extends from the first month to the ninth month and requires the following:

- **Pregnancy Monitoring and Routine Fetal Check-ups:** Using ultrasound to ensure the healthy growth and organ development of the fetus.
- **Health Education on Pregnancy and Its Stages.**
- **Necessary Laboratory Tests for Pregnant Women.**
- **Provision of Necessary Medications and Nutritional Supplements** to ensure a safe pregnancy.
- **Physical and Psychological Preparation for Childbirth.**

❖ **Services Provided During Childbirth:**

Childbirth is one of the most critical and challenging phases, especially for first-time mothers. It requires intensive care, whether the delivery is natural or cesarean, and the provision of healthcare services to ensure the safe completion of this stage. The following diagram illustrates the key elements of care during childbirth as outlined by the World Health Organization:

Figure 1: Diagram representing the WHO model for care during childbirth.



Source: World Health Organization, Recommendations on Maternal Care During Childbirth for a Positive Birth Experience: Transforming Women's and Infants' Care to Improve Health and Well-being, 2018, p. 3.

✓ Explanation and Summary of the Diagram:

- **Provision of Specialized Maternal and Child Healthcare Facilities** across the country and ensuring easy access to these facilities.
- **Deployment of Well-trained Medical Personnel** who work continuously to ensure a successful delivery and the birth of a healthy baby.
- **Equipping Healthcare Institutions with Advanced Medical Equipment** necessary for the safety of the mother and her child.
- **Provision of a Dedicated Emergency Team** in hospitals to handle unexpected complications such as uterine rupture, fetal distress, sudden high blood pressure, and other childbirth-related issues.
- **Ensuring Respectful and Supportive Treatment of Pregnant Women** during childbirth to maintain their mental well-being.
- **Providing Pregnant Women with Necessary Instructions and Guidance** from the medical staff to facilitate a safe and secure delivery process.

❖ **Postpartum Healthcare Services:**

Postpartum healthcare involves the following:

- **Conducting Postpartum Medical Examinations** in specialized hospitals to ensure the safety and proper healing of the surgical wound.
- **Examination of the Newborn** and scheduling vaccinations and immunizations.
- **Raising Awareness Among Mothers** about the importance of breastfeeding for the safety and growth of their child.
- **Providing Women with Contraceptive Methods** to prevent closely spaced pregnancies, which could be physically and mentally harmful.

➤ **Postpartum Psychological State of the Mother:**

Childbirth is a significant life event that receives special medical, social, and cultural attention in every society. During the perinatal period, efforts are made to support the mother's mental state through what is referred to by physicians as "psychological transparency." This is a heightened state of sensitivity related to the hormonal and physical changes a mother undergoes during the postpartum period. At this stage, the mother finds herself in a new phase with a great responsibility of caring for a newborn and understanding its needs. This often results in a unique disposition characterized by anxiety, depression, post-traumatic stress disorder, mother-child relationship issues, marital difficulties, and significant changes in personal relationships. These changes are termed "postpartum blues," and they usually diminish within the first two weeks after childbirth. One in seven women may experience postpartum depression, which is often hidden or ignored by young mothers who feel guilty or ashamed of their sadness due to societal pressure and their level of awareness and education. Despite significant progress in the detection and management of this disorder over the past few years, postpartum depression remains a significant public health issue due to its recurrence and the severity of depressive symptoms and the numerous negative consequences it can have on the child's future. It affects between 10 to 15% of families and, due to lack of clinical and experimental studies, is often undiagnosed and inadequately treated. It is challenging to diagnose postpartum depression because the line between normal adjustment to motherhood and postpartum depression is quite thin¹⁵.

Postpartum depression ranks first among postpartum complications and should not be neglected. It requires special healthcare attention from the surrounding community and referral to specialized agencies to ensure safe childbirth and recovery from associated complications, protecting both mother and child¹⁶.

4. Child Healthcare:

Childcare is one of the most important health and social issues impacting the development of society as a whole. It aims to provide a supportive and healthy environment for the child, ensuring improved quality of life in the long term and helping prevent many diseases and health problems. Proper physical and mental development of children depends on receiving appropriate healthcare, which starts from birth and extends to adolescence. According to the World Health Organization, the first five years of a child's life are crucial in shaping their future growth trajectory, as the nervous system and brain develop rapidly during this period. Comprehensive healthcare during this time serves as the foundation for the child's health, encompassing various key components such as regular medical check-ups, vaccination, and preventive care, all aimed at ensuring healthy growth and protection against diseases.

➤ **Key Components of Child Healthcare:**

- **Regular Check-ups:** These are the cornerstone of comprehensive child healthcare. The American Academy of Pediatrics recommends regular medical examinations to assess the child's general health and monitor their physical and mental growth. Through these check-ups, the doctor can monitor growth and development, evaluate height, weight, and other growth indicators, and ensure the development of motor and cognitive skills. Early detection of any health issues such as congenital defects or developmental delays allows for timely and effective intervention. A study published in the journal *Pediatrics* indicated that regular medical check-ups reduced child mortality rates by up to 40% in some countries due to early diagnosis of medical conditions that parents may not notice at home.

- **Immediate Postnatal Care¹⁷:** Postnatal care begins immediately after birth with the cutting and clamping of the umbilical cord under sterile conditions to prevent infection. The newborn undergoes a general examination to check for any birth injuries and to ensure there are no congenital abnormalities. The baby is weighed, with a normal full-term birth weight ranging between 2.5 and 4.5 kg. The healthy newborn should remain with the mother during the first hour after birth for skin-to-skin contact to prevent hypothermia and promote breastfeeding. The newborn is given a 1 mg injection of Vitamin K intramuscularly within the first hour after birth. After ensuring the health and well-being of the mother and newborn in the healthcare facility for at least 24 hours post uncomplicated natural delivery, they are discharged with instructions for mothers on proper hygiene, bathing, and dressing the newborn appropriately for the environment. Mothers are also advised to have the child examined daily during the first week to monitor growth and ensure timely separation of the umbilical cord.

- **Newborn Screening:** The child is examined weekly until the first month, then every two months, and every six months thereafter. During the first visit, a file is created for the child, documenting basic information such

as name, date of birth, and gender, and confirming their general health status after the examination. The doctor records growth parameters such as weight, height, and head circumference, with weight serving as a measure of physical growth. The doctor also charts weight progress and compares it to ideal weight at each visit. A newborn's weight typically ranges from 2.5 to 4 kg, with a head circumference of 35 cm and a length of 50 cm. These standards apply to full-term infants, not preterm babies. The child's temperature is also measured, as it is the first indicator of infectious diseases. The doctor routinely prescribes certain medications to protect the child from various diseases, including Vitamin D, which is given from the first day of birth to prevent rickets¹⁸, and iron supplements to prevent anemia. Mothers are also provided with guidance on proper child nutrition.

• **Healthcare During Early Childhood:** Child healthcare continues from birth through the early years, with varying elements of care depending on the child's age. Parents should regularly and routinely monitor their child's development. Key points of care during these years include¹⁹:

- Ensuring a safe environment, especially when the child starts walking, allowing them to explore freely.
- Introducing the child to the external environment, encouraging play and exploration from infancy.
- Limiting screen time and setting boundaries for its use from birth through adolescence.
- Conducting routine blood pressure, vision, and hearing tests.
- Ensuring proper mental and motor development through speech assessments starting from 18 months to 6 years.
- Monitoring the child's behavior from 18 months for tantrums, sleep patterns, and overall conduct.
- Testing motor skills from age 4, such as walking and running.
- Ensuring a healthy diet and encouraging regular physical activity.
- Providing psychological and social support to the child from the family and educating them on external dangers, such as sexual harassment, kidnapping, and other social issues.

• **Breastfeeding:** Breastfeeding is the ideal way to nourish the child during the first months up to weaning, providing all the nutrients needed for growth and development and significantly enhancing the child's health and immunity²⁰. It reduces the risk of infant mortality, as breastfeeding helps save the lives of 6 million infants annually. Babies who rely on formula milk or bottle-feeding, which often contains powdered milk diluted with water, are more likely to die in infancy²¹. Therefore, mothers should be encouraged to rely solely on breastfeeding during the first six months, as it plays a crucial role in preserving children's lives. Breast milk has protective and immune properties²². Experts agree on the numerous benefits of breastfeeding, including:

- Reducing the risk of sudden infant death syndrome (SIDS).
- Protecting the child from germs.
- Lowering the risk of future heart attacks.
- Promoting healthy and proper organ growth and reducing the risk of obesity.
- Helping the uterus return to its normal size and position quickly.
- Strengthening the emotional and psychological bond between mother and child.
- Protecting the mother from breast cancer and certain types of uterine cancer.
- Acting as an effective form of contraception.
- Strengthening the child's immunity and protecting against various diseases, especially those related to the digestive and respiratory systems.

• **Healthy Nutrition:** After the first six months until weaning at one or two years old, the child's diet becomes crucial. Breast milk or formula milk alone cannot meet the child's new needs for additional minerals and vitamins found in fruits, vegetables, proteins in meats, and legumes, which are essential for growth. The mother should start introducing fruits by giving the child small amounts of fruit juice at the end of the fifth month to provide adequate vitamins, then vegetables from the sixth month to supply minerals, particularly iron, which is lacking in milk. From the seventh month, the child can be given additional foods containing proteins such as lentils, eggs, and soup²³. Meat intake can be gradually increased starting from the eighth month. This dietary regimen helps the mother wean the child gradually, and it is important to maintain a healthy diet for the child even in the later years.

• **Vaccination:** A child is born with some immunity against many diseases, partly acquired during fetal development and partly from breastfeeding. This acquired immunity decreases after birth, especially as the child is exposed to the outside world, where their immune system must work to protect them from health threats, particularly bacterial infections from continuous contact with germs. Thus, the child's immunity must be strengthened through vaccination, a crucial element in preventing child mortality. Vaccination involves injecting small amounts of weakened or dead bacteria or viruses, administered alone or in combination, as injections or oral drops, depending on the vaccine type, to prompt the body to produce antibodies. These antibodies remain in the body, giving the immune system the ability to recognize the diseases and viruses it has been vaccinated against according to a comprehensive immunization schedule. This schedule is outlined in the Ministry of Health's vaccination program for children, tailored to their needs at various stages of development, as illustrated in the following chart:

Table 02: Represents the vaccination schedule for children from birth to 18 months in Algeria.

| Vaccination Age | Type of Vaccination |
|---|--|
| At birth | BCG (anti-tuberculosis) |
| Polio | |
| Hepatitis B vaccine | |
| 2 months | Diphtheria, tetanus, and acellular pertussis vaccine |
| Haemophilus influenzae type b (Hib) vaccine | |
| Injectable polio vaccine | |
| Hepatitis B vaccine | |
| Pneumococcal 13 vaccine | |
| 4 months | Diphtheria, tetanus, and acellular pertussis vaccine |
| Haemophilus influenzae type b (Hib) vaccine | |
| Injectable polio vaccine | |
| Hepatitis B vaccine | |
| Pneumococcal 13 vaccine | |
| 11 months | Measles, mumps, and rubella (MMR) vaccine |
| 12 months | Diphtheria, tetanus, and acellular pertussis vaccine |
| Haemophilus influenzae type b (Hib) vaccine | |
| Injectable polio vaccine | |
| Hepatitis B vaccine | |
| Pneumococcal vaccine (after one week) | |
| Oral polio vaccine | |
| 18 months | Measles, mumps, and rubella (MMR) vaccines |

Source: Multiple Indicator Cluster Survey (MICS), 2019, page 227.

Section Two: Maternal and Child Health Status in Algeria: Challenges and Strategies

1. Maternal and Child Health Status in Algeria:

The health status of mothers and children in Algeria is a key focus within the national health policies. The Algerian government aims to improve health indicators related to motherhood and childhood by implementing various programs designed to reduce maternal and child mortality and enhance the health services provided to these groups. Despite the significant progress made by Algeria in recent years, challenges remain, particularly concerning disparities and inequalities in access to health services between urban and rural areas.

➤ Maternal and Child Health Indicators in Algeria:

Maternal health indicators in Algeria are fundamental for assessing the level of healthcare provided to pregnant women and their uptake of these services, as well as identifying existing gaps and challenges. The following provides an expansion of the key indicators, including the latest available statistics:

Table 03: Shows the percentage of mothers who received healthcare before and after childbirth, based on various socio-demographic characteristics.

| Sociodemographic determinants | | Healthcare before childbirth | | | | | | | | |
|-------------------------------|------------------|--|-----------|-----------|------------------|------|------|-----------------|------|------|
| | | Percentage of specialist doctor visits | | | | | | | | |
| | | First trimester of pregnancy | | | Second trimester | | | Third trimester | | |
| | | No visits | One visit | 3 or more | 0 | 1 | 3≥ | 0 | 1 | 3≥ |
| Place of residence: | Urban | 7.5 | 43.4 | 15.4 | 5.1 | 42.3 | 16.2 | 1.6 | 32.6 | 26.6 |
| | Rural | 10.7 | 49.5 | 10.6 | 6.9 | 46.8 | 12.7 | 2.2 | 37.7 | 21 |
| Age | Less than 25 | 0.8 | 60.9 | 17.3 | 1.4 | 53.1 | 12.5 | 1.7 | 36.0 | 21.1 |
| | 25-35 | 7.9 | 46.8 | 14.3 | 6.3 | 43.2 | 14.4 | 1.5 | 35.0 | 24.3 |
| | 35-49 | 15.5 | 41.8 | 12.6 | 7.5 | 48.0 | 15.0 | 2.0 | 38.5 | 22.1 |
| No children of | 1 | 2.6 | 37.4 | 20.1 | 2.9 | 38.3 | 20.6 | 1.5 | 27.4 | 30.5 |
| | 2 | 7.3 | 48.6 | 13.1 | 5.8 | 43.8 | 13.5 | 1.5 | 34.2 | 23.1 |
| | 3 | 9.5 | 50.0 | 11.3 | 5.9 | 45.6 | 11.5 | 1.8 | 38.5 | 21.5 |
| | 5 or more | 20.4 | 48.7 | 7.7 | 13.6 | 49.4 | 11.9 | 3.6 | 41.7 | 20.9 |
| The educational levels | Illiterate | 18.9 | 51.2 | 8.9 | 14.6 | 50.5 | 10.8 | 4.9 | 42.6 | 18.2 |
| | Primary | 12.5 | 51.8 | 10.3 | 7.5 | 45.7 | 13.5 | 1.9 | 40.5 | 21.3 |
| | Intermediate | 8.8 | 48.0 | 12.0 | 5.5 | 45.5 | 13.6 | 2.2 | 36.5 | 21.1 |
| | Secondary | 6.9 | 45.0 | 14.2 | 4.9 | 44.5 | 15.6 | 0.9 | 33.8 | 26.9 |
| Works | Higher Education | 4.1 | 37.9 | 18.6 | 2.3 | 38.2 | 18.1 | 0.9 | 25.8 | 30.6 |
| | Employed | 4.6 | 33.6 | 19.2 | 2.6 | 36.5 | 18.4 | 0.9 | 23.4 | 31.8 |
| The economic levels | Unemployed | 4.9 | 47.6 | 12.6 | 6.3 | 45.2 | 14.3 | 2.0 | 36.2 | 23.2 |
| | Poor | 16.1 | 52.1 | 8.1 | 11.0 | 49.9 | 9.6 | 3.6 | 44.5 | 18.0 |
| | Middle-class | 7.0 | 47.4 | 13.1 | 4.3 | 41.5 | 14.5 | 1.1 | 37.6 | 23.6 |
| | Rich | 5.0 | 36.1 | 19.8 | 2.5 | 35.0 | 21.7 | 0.6 | 25.9 | 32.6 |

Source: The table was prepared by the researcher based on the final results report (2020) of the Multiple Indicator Cluster Survey (MICS6) 2019.

Based on the data presented in the table, it is evident that access to prenatal healthcare for mothers is significantly influenced by demographic and social factors. Mothers with higher educational levels, better economic status, and those living in urban areas are more likely to regularly follow up on their pregnancies and receive adequate healthcare through consistent visits to the doctor. In contrast, mothers in rural areas, with lower income or limited education, face greater challenges in accessing this care, which can negatively impact their health and the health of their children. From these findings, we can conclude that the primary determinant of the quality of healthcare and the likelihood of receiving it is the sociodemographic factors, which provide a clear picture of the reality of the situation.

Table 04: Shows the percentage of mothers who received healthcare during and after childbirth according to different sociodemographic characteristics.

| Sociodemographic determinants | | The percentage of mothers receiving healthcare during childbirth and postpartum % | | | | | | | | |
|-------------------------------|------------------|---|------------------|------|-------------------|---------|-------------|-------------------------------|------------------|--------------------|
| | | Place of birth | | | Birth attendant | | | Type of delivery | | Postnatal check-up |
| | | Public hospital | Private hospital | Home | Specialist doctor | Midwife | Traditional | Vaginal without complications | Cesarean section | |
| Place of residence: | Urban | 85.6 | 13.3 | 0.8 | 82.2 | 60.8 | 0.2 | 51.5 | 59.0 | 88.8 |
| | Rural | 89.3 | 8.9 | 1.8 | 29.4 | 68.2 | 0.7 | 53.8 | 57.7 | 86.1 |
| Age | > 25 | 93.5 | 2.8 | 3.7 | 20.4 | 75.3 | 1.0 | 49.2 | | 80.4 |
| | 25-35 | 86.7 | 12.0 | 1.1 | 34.3 | 64.3 | 0.4 | 49.5 | 60.5 | 87.3 |
| | 35-49 | 88.0 | 10.5 | 1.4 | 35.8 | 62.5 | 0.4 | 61.7 | 68.2 | 80.1 |
| The educational levels | Illiterate | 91.2 | 3.6 | 5.0 | 23.6 | 70.2 | 1.8 | 60.8 | 57.0 | 85.5 |
| | Primary | 90.5 | 7.6 | 1.9 | 29.0 | 68.7 | 0.8 | 54.3 | 55.9 | 87.2 |
| | Intermediate | 90.8 | 8.4 | 0.5 | 33.0 | 66.1 | 0.2 | 50.2 | 59.8 | 86.7 |
| | Secondary | 84.5 | 14.3 | 0.9 | 36.8 | 62.2 | 0.2 | 51.3 | 60.3 | 87.1 |
| | Higher Education | 80.2 | 19.4 | 0.2 | 43.2 | 56.5 | 0.1 | 51.8 | 56.8 | 91.0 |
| The economic levels | Poor | 91.3 | 5.5 | 3.1 | 23.5 | 72.3 | 1.3 | 59.5 | 58.1 | 83.9 |
| | Middle-class | 89.1 | 10.2 | 0.7 | 33.9 | 65.3 | 0.3 | 52.4 | 58.4 | 88.6 |
| | Rich | 73.1 | 26.0 | 0.9 | 51.0 | 48.4 | 0.0 | 47.8 | 38.3 | 90.8 |

Source: The table was prepared by the researcher based on the final results report (2020) of the Multiple Indicator Cluster Survey (MICS6) 2019.

The table shows that the percentage of mothers receiving prenatal healthcare in terms of adequate medical conditions and quality care, based on variables such as (type of delivery, place of delivery, delivery supervisor, and routine postnatal checkups), varies according to sociodemographic determinants. The highest percentages are observed among mothers with higher educational levels, better economic status, and those living in urban areas, while the lower percentages include mothers in rural areas, with low income and limited education, who face greater challenges in accessing this care, which can negatively affect their health and the health of their children.

Child Health Indicators: Child health is one of the fundamental pillars of the success of health systems, as these indicators reflect the quality of healthcare provided to children, from birth to advanced childhood. Below, we will discuss the most important child health indicators in Algeria, along with the latest statistics.

Table 05: Shows the percentage of children receiving postnatal healthcare according to different sociodemographic characteristics.

| Sociodemographic determinants | | The percentage of children receiving their essential healthcare services. | | | | |
|-------------------------------|------------------|---|-----------------------------|--|----------------------------------|----------------------------------|
| | | Care immediately after childbirth | Breastfeeding for two years | Caring for the infant's hygiene and bathing them | Vaccination (essential vaccines) | Routine check-ups after one week |
| Gender | Male | 92.0 | 27.2 | 58.9 | 71.4 | 11.7 |
| | Female | 91.0 | 25.5 | 57.6 | 72.4 | 12.6 |
| Place of residence: | Urban | 91.3 | 24.6 | 59.1 | 71.6 | 12.4 |
| | Rural | 91.9 | 28.6 | 57.2 | 72.3 | 11.7 |
| The educational levels | No level | 89.1 | 30.3 | 51.8 | 46.8 | 6.7 |
| | Intermediate | 91.1 | 25.8 | 59.1 | 63.9 | 10.6 |
| | Higher Education | 93.7 | 18.0 | 61.4 | 63.1 | 18.1 |
| The economic levels | Poor | 89.9 | 25.8 | 53.7 | 47.4 | 9.2 |
| | Middle-class | 91.9 | 30.2 | 57.9 | 62.6 | 11.3 |
| | Rich | 94.9 | 26.8 | 64.6 | 67.2 | 18.9 |

Source: The table was prepared by the researcher based on the final results report (2020) of the Multiple Indicator Cluster Survey (MICS6) 2019.

Based on the results of the table, it appears that the child's access to healthcare elements, such as postnatal care, breastfeeding, infant hygiene, vaccination, and regular check-ups, varies according to social and demographic characteristics. We find that the rate of immediate postnatal care is high for all children regardless of their characteristics, with the highest rate being 94.9%. This is due to most mothers giving birth in maternity centers under the supervision of healthcare professionals. However, the rate of exclusive breastfeeding for a full two years is low for most children and relatively higher among illiterate mothers. This is because stay-at-home mothers are more dedicated to exclusively breastfeeding their children. Meanwhile, the rate of attention to child hygiene and vaccination is good across all children, indicating that these are common and routine practices for all mothers regardless of their characteristics. As for regular check-ups for

children, they are somewhat low, but slightly higher among mothers with higher education levels and higher income.

Child Mortality Rates: The child mortality rate is one of the most important health indicators, as it is linked to a category that requires high-quality healthcare due to the high risk of death at this age. The table below shows the mortality rates for infants, newborns, and children under five years old:

Number of deaths = (Number of infant deaths during the year × 1000) / (Number of live births in the same year).

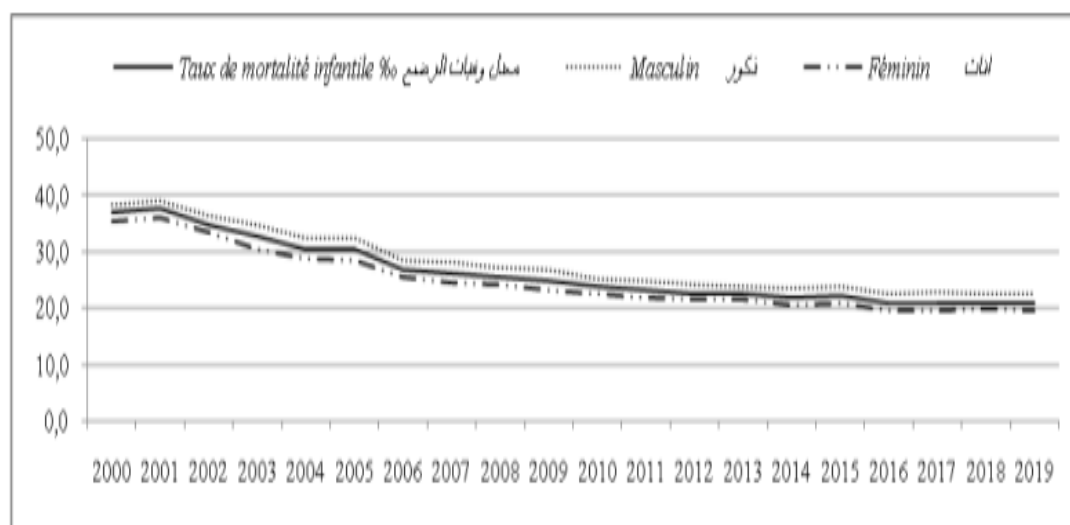
Table 04: It shows the child mortality rate for the year 2019 according to the period of death.

| Period of Death | Child Mortality Rate in 2019 (%) |
|------------------------|----------------------------------|
| Stillbirths | 12.0 |
| Neonatal | 16.2 |
| Early Neonatal | 12.7 |
| Late Neonatal | 4.8 |
| Infants | 21.0 |
| Children under 5 years | 22.7 |

Source: Prepared by the researcher based on the results of the Quarterly Statistical Bulletin, Quarter Four, 2021, p. 9.

It is evident from the child mortality rate table for the year 2019, based on the period of death, that the infant mortality rate is significantly lower in late neonatal children, estimated at 4.8%, which is very low compared to other rates. The mortality rate increases in early neonates and records the highest rates of mortality among infants and children under 5 years old. This is due to neglect in healthcare during this age period.

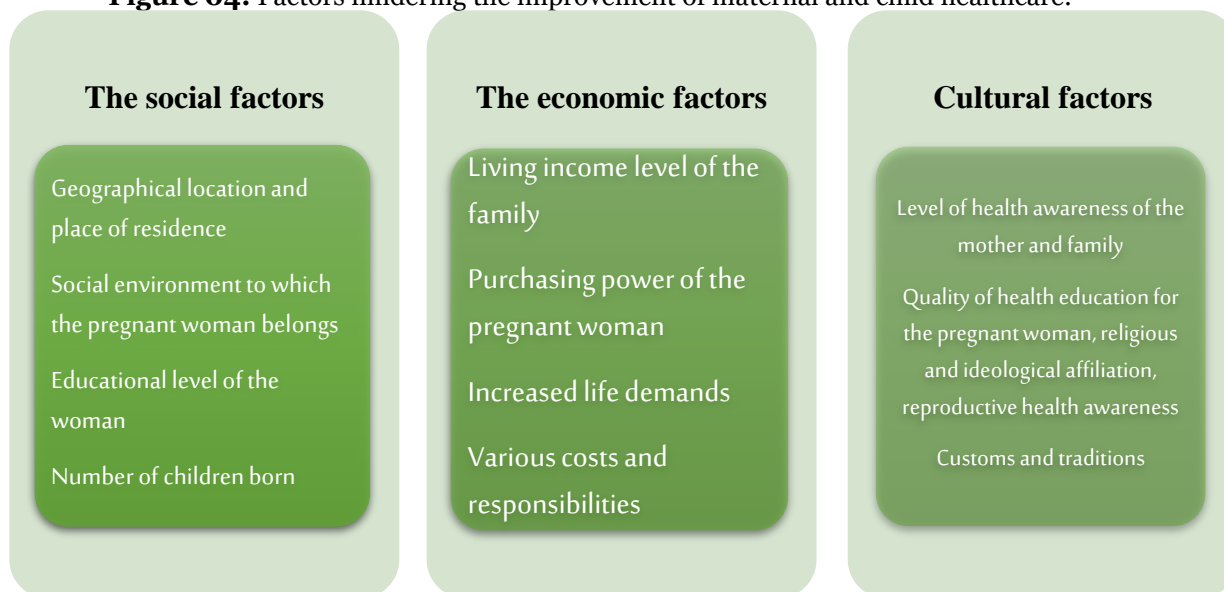
Figure 03: It shows the annual evolution of the infant mortality rate by gender from 2000 to 2019.



Source: Results of the Quarterly Statistical Bulletin, Quarter Four, 2021, No. 114, p. 10.

The results of the graph showing the annual evolution of the infant mortality rate by gender from 2000 to 2019 indicate a significant and noticeable decline in the infant mortality rate over the past decades. It decreased from 40 deaths per 1,000 live births in 2000 to about 20 deaths per 1,000 live births in 2019. This improvement is attributed to the development of healthcare services.

2. Factors Hindering the Improvement of Maternal and Child Healthcare in Algeria: The concept of maternal and child healthcare refers to all the political, economic, social, and environmental factors that affect the health of pregnant women and their newborns²⁴. Healthcare encompasses the various efforts made by social systems to maintain health and prevent illness and death. Islam has emphasized the necessity of providing the required care and protection for the fetus by ensuring that the mother receives adequate nutrition and psychological and physical care²⁵. Despite these efforts, there are conditions and factors that prevent mothers from obtaining the necessary care. These factors vary and include social, economic, and cultural factors, which can be illustrated in the following diagram²⁶:

Figure 04: Factors hindering the improvement of maternal and child healthcare.

Source: Diagram prepared by the student based on previous tables and their analysis.

3. Strategies for Developing Maternal and Child Healthcare to Improve Health Conditions in

Algeria: The health policy in Algeria aims to provide comprehensive and free healthcare services to all citizens, focusing on the most vulnerable groups, such as mothers and children. This policy has been developed in line with the commitment to the recommendations of the World Health Organization (WHO) and the achievement of the Sustainable Development Goals (SDGs), particularly the third goal related to ensuring healthy lives for all at all ages²⁷. Given the special attention required by mothers and children, Algeria has adopted strategies to improve maternal and child healthcare to enhance reproductive health and prevent child mortality. These strategies have achieved significant progress, reducing maternal mortality to 48.5 deaths per 100,000 live births in 2019. With the continued efforts and government commitment to achieving the Sustainable Development Goals by 2030, this mortality rate is expected to drop to 20 deaths per 100,000 live births²⁸. The main elements of this strategy can be summarized as follows:

- **Enhancing Access to Primary Healthcare:** This strategy aims to expand primary healthcare, especially in rural and remote areas, through building and equipping new health centers and providing mobile medical teams to deliver necessary healthcare to mothers and children in these regions.
- **Improving the Quality of Care During Pregnancy and Childbirth:** This strategy focuses on enhancing the quality of care provided to pregnant women by ensuring regular medical follow-ups during pregnancy and providing qualified and specialized medical staff in obstetrics. The state also works on improving childbirth conditions in hospitals and ensuring that mothers receive immediate postpartum care to reduce maternal and neonatal mortality rates.
- **Health Awareness and Education:** Health awareness is a fundamental part of the national strategy to improve maternal and child health. These programs aim to increase awareness among women about the importance of healthcare during and after pregnancy and to educate them on how to care for their children in their early stages. It also includes education on proper nutrition.
- **Enhancing Immunization Programs:** This is one of the effective strategies aimed at preventing infectious diseases and reducing child mortality by boosting their immune systems. These programs cover a wide range of essential vaccines for children from birth to school age.
- **Funding Health Programs:** Algeria is working to increase financial resources allocated to maternal and child healthcare programs by improving the health financing system. This includes increasing the Ministry of Health's budget and directing it towards projects focused on maternal and child health, as well as strengthening partnerships with donors and international organizations to support these programs.

Conclusion:

Our study on maternal and child healthcare in Algeria reveals that it is one of the most critical pillars affecting the health and progress of society. Algeria has seen significant improvements in this area thanks to the efforts of the government and the healthcare sector. The study of the reality of maternal and child healthcare in Algeria shows progress in prenatal and postnatal care services, contributing to reduced child mortality rates and improved pregnancy outcomes. These achievements highlight the state's commitment to developing the healthcare system and achieving the Sustainable Development Goals (SDGs) in this field. However, challenges persist, as there is a disparity in access to quality healthcare services, especially in rural and remote areas. Additionally, challenges related to a shortage of medical staff and specialized training threaten to undermine

the gains made so far. The lack of health awareness and education programs further complicates the situation, limiting mothers' and families' ability to make informed health decisions, which in turn leads to negative health outcomes affecting children's growth and overall health. Addressing these issues requires a coordinated response combining efforts from the government, civil society, and the private sector, and the development of comprehensive strategies aimed at enhancing maternal and child healthcare through the adoption of innovative solutions that ensure fairness and balance in access to healthcare services. Based on the research findings, we can conclude that the study's hypothesis is valid, as evidenced by the following results:

- Improving maternal healthcare is directly associated with a decrease in child mortality rates.
- Providing appropriate healthcare to mothers before and after childbirth reduces potential pregnancy complications, leading to improved birth outcomes.
- Comprehensive vaccination programs and proper child nutrition play a crucial role in reducing infectious diseases among children and, consequently, reducing mortality rates.
- Urban-rural disparities create significant differences in access to maternal and child healthcare.
- Health education for mothers plays a vital role in improving children's health.
- Health policies aimed at improving maternal and child healthcare contribute to reducing child mortality rates.

Recommendations for Improving Maternal and Child Health:

- Strengthen child vaccination and nutrition programs.
- Improve healthcare infrastructure in rural areas.
- Increase health education efforts for mothers.
- Develop comprehensive health policies to support maternal and child healthcare.

Footnotes

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