

The Risk Factors of Anemia in Woman Delivered at the Hospital in Marrakech- Morocco

Souad. El Mouahid, Asmae Ettazi , Btissam Hadri, M'barka Raid and Meryem Benkik
Higher Institute of Nursing and Health Professions in Morocco – ISPITS MOROCCO.

ARTICLE INFO

Article history:

Received: 1 May 2017;

Received in revised form:

4 June 2017;

Accepted: 15 June 2017;

Keywords

Anemic delivery,
Marrakech,
Midwife,
Sociodemographic
Characteristics.

ABSTRACT

Anemic delivery is a public health problem in Morocco that can lead to complications in mothers and children. The aim is to describe the socio-demographic characteristics and risk factors of anemic delivery attendants in the maternity ward of the IBN TOFAIL Marrakech Hospital. The results revealed that anemic (AD) mothers have low socioeconomic status and education; and the risk factors associated with non-pregnancy monitoring. According to midwives, anemia affects the health of mothers and newborns. A need for clinical screening for anemia during the first pregnancy consultation and at each prenatal consultation reduces the risks associated with this pathology.

© 2017 Elixir All rights reserved.

Introduction

According to the World Health Organization in 2015, anemia is a major public health problem in the world, particularly in women of reproductive age. She estimates that a large proportion of cases of anemia are due to iron deficiency, and iron deficiency anemia during the postpartum period (six weeks after delivery) can have serious consequences and endanger long-term. The state of health of the mother and the child [1]. This anomaly can eventually cause complications, affecting nearly a quarter of the world's population. This blood disorder needs to be treated when the situation becomes critical [2]. WHO states that "no less than 25% of the world's population would suffer from anemia". He reports that 51% of pregnant women (both developed and developing countries) have anemia. It is a variable gravity disorder with 10 to 30% of pregnant women in developed countries and 40 to 80% in developing countries. According to the most recent estimates (WHO, 2016), the prevalence in 2011 of anemia worldwide is 29% among women of reproductive age. Demographic estimates published by the United Nations show that this percentage estimates a number of 533 million women of reproductive age suffering from anemia in 2011. The highest rates are recorded in West Africa and South Asia [3]. Anemia is one of pathology the most common obstetric, 90% of which is due to iron deficiency [4]. According to Pr. OUKID and Pr. HERICHE, anemia is the most frequent anomaly in hematology. It is defined by a decrease in hemoglobin that is less than 12 g / dl in women outside pregnancy and is present in 10 to 15% of pregnancies [5]. In contrast, anemia is a significant risk factor for maternal and especially fetal morbidity, especially if the anemia is pre-existing during pregnancy. Iron requirements during pregnancy are significantly increased.

These needs increase especially during the second part of the pregnancy, in connection with the increase of the mother's globular mass, the needs of the fetus and the placenta and the blood loss at the birth (delivery).

The response to these needs depends on the state of reserves before pregnancy (Marine Legroux, HAL 2011). Especially, these needs vary according to age, lifestyle, smoking habits and stage of pregnancy [6]

In the world, iron deficiency is the most common cause of anemia. However, other nutritional deficiencies (folic acid, vitamin B12 and vitamin A) are therefore considered [5]. Iron requirements vary significantly over the three trimesters of pregnancy and as defining criteria for pregnancy anemia: first trimester <11 g / dl and in the second trimester <10.5 g / dl and in the third trimester < 11 g / dl and in the postpartum, by a rate of less than 10 g / dl. All this emphasizes need to detect an eventual anemia during pregnancy and the importance of the term to which this screening is carried out.

According to Rey J, Lansac J and French society of pediatrics cited by Marine Legroux in 2011 [7,8,9], anemia is one of the pathologies to be systematically investigated when certain risk factors are present, such as: Multiparity, prolonged breastfeeding, pre-pregnancy bleeding, poor diets (vegetarian women, woman from North Africa), close up pregnancy (gap between two pregnancies less than one year, multiple pregnancies, ages Extreme (<18 years or> 40 years), poor socioeconomic status, antecedents of iron deficiency anemia pregnancy or not, geography: clay absorbed by certain ethnic groups (African ...) preventing intestinal iron absorption and may be responsible for severe martial defects, a hemorrhagic context during pregnancy.

Consequently, according to several studies cited in particular, anemia presents maternal repercussions. On the other hand, the risks of anemia in the mother include a reduction in reserves at the delivered and thus a greater threat of blood loss, transfusion, symptoms of anemia (fatigue, headache, and dizziness). Similarly, anemia causes fetal repercussions. The consequences for the fetus may be high premature births, increased perinatal mortality, and increased risk of prematurity, low birth weight (hypotrophy), retraso

delcrecmieno intrauterino (RC IU), abnormal extremities and malformations of the neural tube (hydrocephalus and Spina bifida).

Morocco, like other countries, does not escape the phenomenon observed by the Moroccan population, noting that the last national survey carried out by the Ministry of Health in Morocco showed that the prevalence of anemia is 37, 2% in pregnant women [10].

To reduce anemia, Morocco has developed various strategies in 2015 based on the promotion of breastfeeding, nutritional education, control and eradication of infections and parasitic diseases, iron supplementation of pregnant women and the enrichment of broad-based foods. These actions reduce iron deficiency. According to WHO in 2016 Daily oral iron and folic acid supplementation is recommended for pregnant women to prevent maternal anemia, low birth weight and preterm birth [11, 12].

At the level of the IBN TOFAIL maternity in Marrakech, we observed that several women delivered have a problem of anemia and the latter presents serious complications among: Haemorrhage, Shock, Cerebrovascular accident, Chronic renal insufficiency, Autoimmune disease and other. It is in this context that we are committed to carrying out an exploratory and descriptive study of the risk factors of anemia in mothers delivered at the level of the Hospital IBN TOFAIL CHU Mohammed VI of Marrakech in order to identify the role of the midwife face to this alarming problem nationally and suggest solutions for improving the management of anemia at the level of the Hospital Mother children of CHU Mohammed VI of Marrakech

Material and Method

We carried out a quantitative descriptive study of the first level during the year 2016, in which we used a interview grid that was developed and tested to serve as a data collection support for about 120 women delivered and a questionnaire for midwives (15) involved in the management of anemia. The study identified factors related to patients, midwives and the environment. The data collected were captured and analyzed by the Excel 2010 software.

For ethical considerations, the respect, informed consent and confidentiality of the data as well as the introductory letter of the questionnaire provided details on the research topic and guaranteed the anonymity and the confidentiality of the information collected. The data collection took place at the beginning of July 2016 until 31 December 2016. After having built the questionnaire and having tested and validated it. The questionnaire was distributed to all midwives selected for the study (No sampling out of a total of 15 midwives). Recovery after filling was carried out one week after distribution. The interview grid was carried out in the nursing service with anemic mothers (120 inmates selected by the non-probabilistic sampling method by the accidental method that is to say, as researchers are present in the suite service of layers). In order to validate this grid, we conducted the interview while explaining our questions with the Arabic language to have all the answers to our questions asked. The data collection phase was preceded by a pre-test of the survey instruments. And to other maternity nurses with similar activities, in order to estimate the internal reliability and the validity of the content. The nurses / midwives, with whom the pre-test is performed, are excluded from the study.

Results and Discussion

Anemia during pregnancy, particularly severe anemia, is associated with a negative impact on both the woman who has given birth and the newborn. Several risk factors are involved.

In the light of the results obtained from the interview guide (120 AD) and those obtained from the questionnaire (15 Midwives). Interpretation and discussion of the results being carried out in referring to the terms of reference for this study. In this perspective, an approach based on the comparison of the empirical results (questionnaire and the interview guide) and those described in the literature review will be presented.

Socio-demographic and Geographical factors

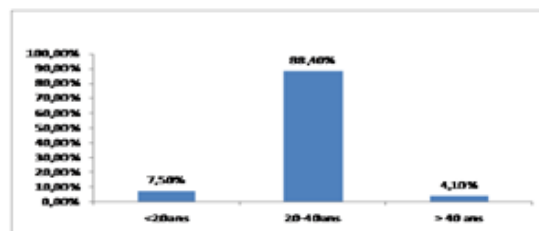


Figure 1. Distribution of anemic delivery by age.

This survey targeted anemic births at the level of the hospital IBN TOFAIL Marrakech. Indeed, the results obtained confirmed that the majority of anemic women have an age group (figure 1) between 20 and 40 years (88.40%). These results have been confirmed by several studies [6, 18]. According to Pr. OUKID and Pr. HERICHE [5], the prevalence is higher among younger women of age around twenty years, and it is all the stronger as the age of pregnancy is advanced. Similarly, the mean age of the anemic population is 29.3 years with a standard deviation of 6.2 years and extremes ranging from 19 years to 41 years [6].

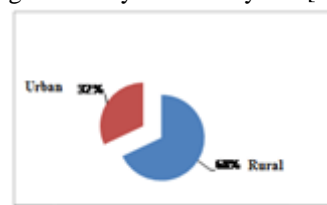


Figure 2. Distribution of anemic births by origin.

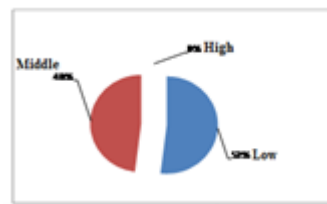


Figure 3. Distribution of anemic births by income.

The majority of anemic births come from the rural environment with 68% and only 32% of the urban environment (figure 2). 52% of anemic birth (figure 3) attendants have a low or a lower income level than the SMIG (legal minimum wages in morocco = 2600 Dh / month)

Table 1. Distribution of AD anemic births by occupation, level of education and parity.

The profession	
With profession	12%
Without profession	88%
Level of education	
Illiterate	46%
Primary studies	13%
Secondary studies	31%
Parity	
Less than 3 children	37%
More than 3 children	63%

The study reveals that only a minority of anemic births with a work activity of which 22% and the rest 88% are housewives (Table 1) and 46% of anemic births are illiterate. Our study showed that anemic births from an unfavorable

environment and a low level of income and education are the most affected by this problem. These results were observed in a study of anemia in hospital in Morocco [17] which showed that 76.2% of illiterates in anemic female sex

The study found that 61% of the patients come from particularly unfavorable socio-economic backgrounds of rural origin, while 39% of the patients come from urban areas where living conditions are better than those in rural areas. Anemias of pregnant women are common in general and depend in part on the nutritional status of the population. In developed countries, 10 to 20 per cent of women in wealthy backgrounds and over 30 per cent of women in disadvantaged backgrounds are affected [5, 15]. The difference in the prevalence of pregnancy anemia between developed and developing countries can be explained by socioeconomic status. Unemployed women or housewives noted a clear predominance of anemia 98.2% compared with 1.8% worker in female patients [18].

According to some studies, the prevalence of iron deficiency anemia during pregnancy increases at the approach of the term and may be influenced by several socio-economic factors and by epidemiological factors such as age or geographical origin [14]. Low-income pregnant women are often at risk for nutritional deficiencies, according to A. WALEED. M. ABU-HASIRA in 2007 consequently lead to complications in iron deficiency because low-income families are unable to provide the same nutritional inputs as higher-income families [20].

According to this study, the level of educations is important because it conditions knowledge about the basic components of a balanced diet which is essential. Our study showed a relationship between the number of anemic births and the association between education and incomes. Often, the level of education is linked to the economic situation. Individuals can obtain well-balanced nutritious meals if their knowledge of nutrition is adequate even their very limited socio-economic (income) levels [20].

Similarly, parity, which is defined as the number of previous deliveries, is a significant factor in our context. In our study, the anemic multipares (> 3) had strength of 63%. A prevalence of 44.3% in the association of anemia and pregnancy is much higher, according to an Anemia study in women of reproductive age in Morocco (Oujda-Angad Prefecture) [18]. Our findings corroborate those observed in Algeria, 65.77% of multiparous women are anemic and close pregnancies (on average 2.8 pregnancies) constitute a risk factor for anemia (19).

Pregnancy Tracking Factors

Table 2. Distribution of AD anemic births by pregnancy follow-up and place of follow-up and use of mothers' class.

Tracking Pregnancy	
Yes	26%
No	74%
Place of pregnancy follow-up	
Health Center	17%
Maternity reference	9%
Not monitored	74%
Use of mothers classes (IEC: Information Education Communication)	
Yes	0%
Non-recourse	100%

We find that the majority of anemic births do not follow their pregnancies (74%) followed by 17% of anemic mothers

following their pregnancy at the health center level and only 9% who consults at maternity reference level. First-trimester screening is not performed by the majority of anemic women (74%) and this consultation is very important because it makes it possible to identify the risk factors and to be able to launch an earlier and perhaps more exhaustive assessment According to other specific factors detected in the history.

Since the number of anemia in mothers increases with the low socioeconomic and occupational level, so too does the pregnancy follow-up, which in turn depends on the socio-economic level of the patients. In our study 74% of our anemic mothers had not followed up on their pregnancy. Our results corroborate with other authors, anemia was greater in patients not followed with a prevalence of 48.2% of anemic versus 29.9% in patients who had a regular follow-up and the difference was statistically significant ($P < 0.005$) [18].

Despite the efforts made by the Ministry of Public Health in Morocco [21,22], which has put in place several strategies in the context of safe motherhood, such as the systematic introduction of free care for pregnancy monitoring and Strengthening the availability of medicines and iron supplements while increasing the posts of gynecologist, pediatric and resuscitation doctors and qualified midwives by strengthening through training cycles, the socioeconomic barriers; Cultural, difficulties in accessing care (rural); The precariousness of living conditions are blocking and hurting this strategy.

Table 3. Distribution of Anemic delivery by a history of anemia, hemoglobin, and iron supplementation.

antecedent of anemia	
yes	32%
No	68%
The rate of hemoglobin	
< 9 g/dl	75%
9-10 g/dl	25%
>10 g/dl	0%
Iron supplementation	
yes	27%
No	73%

Our study shows that 68% of anemic women have no anemic history. The WHO in 2003 recommended clinical screening for anemia at the first pregnancy consultation and at each antenatal clinic for signs such as headache, dizziness, tinnitus, cutaneous mucosa, pallor of conjunctivitis [23]. Similarly, in order to prevent the risk of anemia in pregnant women, WHO in 2016 recommends complete blood counts (NFS) for the diagnosis of anemia during pregnancy [13]. In the contexts where this method is not available, an on-site assay of hemoglobin with a hemoglobinometer is recommended in preference to the use of the hemoglobin color scale as a means of diagnosis of hemoglobin, Anemia in pregnant women.

The majority of anemic births (75%) have a hemoglobin level of less than 9 g / dl and only 25% have a rate between 9-10g/dl. This number remains low compared to that defined by WHO [16]. In pregnant women, the hemoglobin level to diagnose moderate anemia varies between 7 and 9.9 g / dl [5]. 73% of anemic births do not consume a daily iron supplementation and the lack of it in the daily diet is a high risk. This observation has been reported by several authors [18] that before any treatment or any biological explorations, the first intervention must be the prevention.

Nutritional counseling should be given to patients. In case of difficulties, the orientation towards a dietician is quite

possible. On the other hand, the observed anemias are due to nutritional deficiency are due to poor diets and nutritional attitudes observed in developing countries [5].

In Morocco, iron deficiency is responsible for anemia of pregnancy. The goal of the Ministry of Public Health in 2008 is to reduce iron deficiency anemia in the supply of micronutrient health facilities (vitamins A and D, iron and folic acid) and ensure good supplement management (provincial and central) while applying a system of information and awareness-raising among health personnel and the population to promote micronutrient supplementation.

The need for iron supplementation (ferrous sulfate) is usually recommended in most pregnant women, although Hb is normal in early pregnancy. This prophylactic measure prevents reserve iron depletion and anemia that may result from abnormal bleeding or successive pregnancies. If normal intake has not been supplemented during pregnancy, pregnant women in late pregnancy will have deficit iron stores. According to the WHO in 2015, a significant proportion of cases of anemia are due to iron deficiency, and iron deficiency anemia during the postpartum period (six weeks after delivery) can have serious consequences and compromise Long-term health status of the mother and child [1] The effects of this deficiency are all the greater if they are early, or even if they precede pregnancy. The risks of premature birth and the birth of low-weight children are respectively 2.5 and 3 times higher in women with iron deficiency anemia [5].

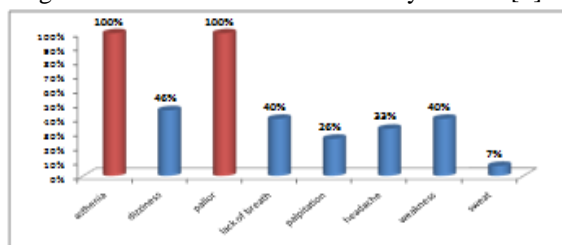


Figure 4. Distribution of anemic births by signs of anemia.

Clinical signs of anemia such as pallor and asthenia are more dominant signs followed by dizziness and lack of breath in one third of the cases. It is therefore important to carry out a screening in the presence of clinical signs in order to put an adequate treatment in place whether it is curative or preventive. Nevertheless, the absence of clinical signs in the majority of cases should prompt us to resort to clinical diagnosis to detect anemia during pregnancy. In the postpartum period, anemia promotes a thromboembolic risk, diminishes the means of defense against infection and may cause maternal tired that may disrupt the establishment of the mother-child bond. In general, physical symptoms of anemia occur only when the hemoglobin level is less than 7-8 g / dl [5].

Table 4. Distribution of mother-to-child complications in AD anemic mothers' delivery.

The complications	
Yes	86%
No	14%
Types of complications	
Hemorrhage	35%
Infection	42%
Intrauterine Fetal Death (IUFD)	10%
Threat of Preterm (TOP)	8%
Intrauterine Growth retardation (RCIU)	5%

All the more so, our survey showed that 86% of anemic mothers presented complications, among others, hemorrhage

in 35% and infection in 42%. In fact, a significant blood loss in a patient with already precarious hemoglobin status can have dramatic repercussions that can lead to death. WHO in 2003 reported that in developing countries where dietary iron is not very bioavailable, morbidity and mortality are related to the complications of these anemias during pregnancy [23]. An iron deficiency increases the risk Complications in children.

The study showed that in anemic midwives; Intra Uterin Fetal Death (IUFD) (10%) followed by Threat of Preterm Delivery (TOP) (8%) and Intrauterine growth retardation (RCIU) (5%). The consequences of anemia are multiple and varied, including delayed growth and disruption of mental and cognitive development in children [17] These findings were confirmed by another study [5]: a deficit In vitro B9 increases the risk of intrauterine growth retardation, preterm delivery, malformation and severe anemia, the consequences on the fetus can lead to a premature birth rate, an RCIU and an increase in perinatal mortality. Improved management during pregnancy helps mitigate these anemic complications in the mother and fetus. Indeed, community mobilization through facilitated participatory learning and action (PLA) cycles involving women's groups is recommended to improve the health of mothers and newborns, especially rural areas where access to health services is limited [14]. Participatory women's groups in mother's classes represent an opportunity for women to discuss their needs during pregnancy, including barriers to reaching care, as well as improved support for pregnant women. [13].

Conclusion

The results presented showed that screening in the first trimester is therefore essential to allow the implementation of an effective therapy to prevent materno-fetal risks. And good care in prenatal and maternal classrooms (mother's classes) and better education in this category of anemia will reduce the incidence of anemic delivery and alleviate complications.

Several recommendations are possible, but we limit ourselves to those that we consider to be priority, practical and feasible.

□ Pregnant women's awareness of the risks posed by anemia becomes very useful in informing and educating pregnant women about their diet during pregnancy. Then this awareness raises the possibility of advising women to continue their pregnancy (prenatal consultation) and inform them of having given birth in a supervised environment.

□ Nurses, especially midwives and multi-purpose nurses, take their part in the care of anemic women. First is to treat anemic women during pregnancy (Iron & folic acid) then show that an identification of risk factors during pregnancy is useful because it allows to develop an adequate management according to these factors and strengthening IEC (information, education, communication) sessions with anemic birth attendants. At the level of maternity services, improved availability of blood and vital obstetric medicines helps to strengthen and improve the management of anemic delivery.

References

- [1] OMS. 2015. Supplémentation en fer ou en fer/acide folique dans la prévention de l'anémie chez la femme pendant le postpartum http://www.who.int/elena/titles/iron_postpartum/fr/
- [2] Anémie : définition, traitement, symptômes, causes, de quoi s'agit-il? <http://www.vie2science.com/2015/07/anemie-definition-traitement-symptomes-causes-de-quoi-s-agit-il.html>

- [3]OMS. 2016. Nutrition chez la mère, le nourrisson et le jeune enfant Rapport du Secrétariat SOIXANTE-NEUVIÈME ASSEMBLÉE MONDIALE DE LA SANTÉ A69/7 Point 12.1 de l'ordre du jour provisoire 29 avril 2016
- [4]Third report of the world nutrition situation. Geneva: Administrative Committee on Coordination (ACC)/Sub-Committee on Coordination (SCN), 1997; 111p. (Consulted the 14/4/2017), disponible à partir de l'URL: <http://www.john-libbeyeurotext.fr/e-docs/00/04/03/61/article.phtml>
- [5]Pr. OUKID, Pr. HERICHE. Anémie et grossesse. <https://archive.org/details/MenaceDaccouchementPreMaturew> www.laFaculte.net
- [6] Marine Legroux. Dépistage et prise en charge de l'anémie des grossesses à bas risque. Gynécologie et obstétrique. 2010. HAL Id: dumas-00572936 <https://dumas.ccsd.cnrs.fr/dumas-00572936> Submitted on 2 Mar 2011
- [7]Rey J, Sachet P. La supplémentation des femmes enceintes durant la grossesse. Résultats d'une enquête auprès de gynécologues-obstétriciens. In Rapport des Xes Journées de Techniques Avancées en Gynécologie-Obstétrique et Périnatologie, 1995.
- [8]. Société française de pédiatrie – Comité de nutrition, Le fer dans l'alimentation du nourrisson. Arch. Fr Pédiatre 37 (1980), pp. 337–43. 6.
- [9]Lansac J et Magnin G, Obstétrique, collection pour le Praticien, éditions Masson (2008), p. 199-202
- [10]A. El Hamdouchi, K. El Kari, L. Rjimati, N. El Haloui, M. El Mzibri, H. Aguenou et N. Mokhtar. Impact de l'enrichissement de la farine en fer élémentaire sur la prévalence de l'anémie chez les enfants en âge préscolaire au Maroc. Eastern Mediterranean Health Journal La Revue de Santé de la Méditerranée orientale. EMHJ 2010. Vol 16 No.11. pp : 1148-1152.
- [11]Guideline: intermittent iron and folic acid supplementation in non-anaemic pregnant women (non traduit en français). Genève, Organisation mondiale de la Santé, 2012 (http://apps.who.int/iris/bitstream/10665/75335/1/9789241502016_eng.pdf, consulted le 28 septembre 2016).
- [12]Guideline: calcium supplementation in pregnant women. (non traduit en français). Genève, Organisation mondiale de la Santé, 2013. http://apps.who.int/iris/bitstream/10665/85120/1/9789241505376_eng.pdf, consulted le 28 septembre 2016).
- [13]Recommandations de l'OMS concernant les soins anténatals pour que la grossesse soit une expérience positive ; 2016 <http://apps.who.int/iris/bitstream/10665/250801/1/WHO-RHR-16.12-re.pdf?ua=1> (consulted the 8 Mars 2017)
- [14]Caroff-Pétillon A. - Etats des lieux du dépistage de l'anémie pendant la grossesse- Mémoire pour le diplôme d'Etat de Sage-femme, Brest, 2007. 52
- [15]Iron Deficiency Anaemia Assessment, Prevention and Control A guide for programme managers (UNICEF / UNU / WHO., 2001). WHO/NHD/01.3
- [16]OMS. Concentrations en hémoglobine permettant de diagnostiquer l'anémie et d'en évaluer la sévérité. Système d'informations nutritionnelles sur les vitamines et les minéraux. Genève, Organisation mondiale de la Santé, 2011 WHO/NMH/NHD/MNM/11.1. http://www.who.int/vmnis/indicators/haemoglobin_fr.pdf, consulted [14/4/2017]).
- [17]M.El Hioui, A.O.T. Ahami, Y.Aboussaleh, J. D. Lemrini , H. Loutfi. Anémie en milieu hospitalier Marocain: Typologie et influences des facteurs sociodémographiques sur son incidence. 2006. Antropo, 12, 83-91. www.didac.ehu.es/antropo.
- [18]Sellam El Bakkay , Bour, Abdellatif. Anémie chez les femmes en âge de procréer au Maroc (Préfecture d'Oujda-Angad). Antropo . dic2014, Vol. 32, p35-44. 10p.
- [19]A.Demmouche, S. Moulessehou. Prévalence de l'anémie ferriprive au cours de la grossesse dans la wilaya de Sidi BelAbbes (ouest de l'Algérie). 2010. Antropo, 21, 39-48. www.didac.ehu.es/antropo
- [20]A.Waleed. M.Abu-hasira«Iron Deficiency Anemia among Pregnant Women in Nablus District; Prevalence,Knowledge, Attitude and Practices»An-Najah National University Faculty of Graduate Studies Nablus, Palestine,27/03/2007. <https://fr.scribd.com/document/267275187/iron-deficiency-anemia-among-pregnant-women-in-nablus-district-prevalence-knowledge-attitude-and-practices-pdf> consulted le 27/3/2017
- [21]Dr L. RACHIDI « Aide à la réduction de la mortalité maternelle et néonatale : participation communautaire, cas de « Dar Al Oumouma Royaume du Maroc Ministère de la santé Direction de la Population, 2/3/2011
- [22]Malika Aissaoui « La morbidité grave du puerpéral au Maroc » Royaume du Maroc, ministère de la santé, institution nationale d'administration sanitaire, MEM N°112, juillet 1999
- [23]Organisation mondiale de la santé. Soins liés à la grossesse, à l'accouchement et à la période prénatale : guide de pratiques essentielles. Dépister une anémie. 2003.