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Original Research Article

Evaluation of the Quality of CPNS between October 2017 and March 2018 at the Hospital of Gao (Mali)

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Abstract: The aim was to evaluate antenatal consultations at the maternity ward of the hospital in Gao (Mali). ***Materials and methods:*** This was a cross-sectional descriptive evaluative study that involved a randomly selected sample of 122 cases of antenatal consultations carried out over a period of (6 months). ***Results:*** In our study, the 21 to 30 age group was the most represented with a rate of 67%; 23% of pregnant women were between 14 and 20 years old and 10% were over 30 years old. The Sonrhaïs were mostly represented. In fact, more than one in two pregnant women belonged to this socio-cultural group, 53.2%. The majority of our pregnant women were out of school or in high school, i.e. 55% respectively; 38%. The household profession was the most represented in our study, accounting for 60% of cases. During this study, most pregnancies were seen in the third trimester with a rate of 72%, less than % of pregnancies had had 4 PNCs. The objective of comparing the quality index of so-called high-risk pregnancies with others could not be explored due to the very limited number of these pregnancies in our sample.

Keywords: Assessment, Quality, Prenatal consultation.

INTRODUCTION

Pregnancy is a physiological state in women, it extends from fertilization to childbirth. It is a phenomenon with a different connotation depending on the company. It is experienced in Africa as an event that values the woman and allows her to assert herself, to keep or to consolidate her place within the family by giving birth to a newborn baby who is welcomed with joy and joy. But during pregnancy or childbirth, many women lose their lives or suffer complications such as anemia, vesicovaginal fistulas, eclampsia, or uterine prolapse [1]. It is estimated that worldwide every year 4 million newborns die before they are 1 month old and another 4 million are stillborn (they die between the 22nd week of amenorrhea and birth), 90% of these deaths occur in developing countries [4]. Maternal mortality is very high. Around 830 women die every day worldwide due to complications related to pregnancy or childbirth, more than half of them in Africa. According to the 2018 Demographic and Health Survey VI (DHSS VI) [3], the maternal mortality rate was estimated at 325 maternal deaths per 100,000 live births, infant mortality was 66 per 1000 live births, which remains high. The Prenatal Consultation (CPN) is a preventive medical procedure to detect and treat any complications that may occur during pregnancy. It can also be used to suggest the route of delivery. In developed countries, 99% of women receive quality antenatal care while in developing countries, this proportion is 1% [2]. The majority of maternal and neonatal deaths could be avoided if, during pregnancy, women regularly adhered to NPCs and received appropriate antenatal care, if their deliveries were

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attended by trained medical personnel, and if they received postnatal follow-up after delivery. To be effective, antenatal care must be carried out at an early stage of pregnancy and, above all, it must continue with regularity until delivery. WHO recommends up to 8 antenatal visits at regular intervals throughout pregnancy. The WHO recommendations allow countries some flexibility in choosing options for the implementation of antenatal care, according to their needs. Mali's Reproductive Health Procedure recommends 4 visits and 8 contacts during pregnancy [5]. In Mali, it is estimated that seven out of ten women (70%) go to CPN, which is provided by trained staff. These consultations are carried out mainly by midwives or obstetrician nurses in 36% of cases and by matrons in 33%. A much smaller proportion of them are provided by doctors (1%). On the other hand, in just under 3 out of 10 cases (29%), mothers did not perform any NPC [3]. Some studies on the knowledge, attitudes and practices of pregnant women and health workers show that efforts need to be made to improve this situation. In 2004, Mahamat Nour Azalo reported that none of the caregivers knew the indications for caesarean sections, cupping and forceps. [26] In 2006, Bocoum H reported that pregnant women lacked explanations on the warning signs of childbirth and what to do (12.5%), the reasons for prescribing additional tests (17.5%), and the probable date of delivery (16%) [7]. In Bougouni in 2008, Samaké A-K, known as Z, observed procedural shortcomings, such as the interval between consultations, which was most frequently two months instead of one month [15]. In December 1990, Mali adopted the Health and Population Sector Policy. This policy is characterized by the decentralized development of health services on the basis of population concentration. It defines the information framework for population health in Mali [9]. The specific objectives of this policy are to: expand health coverage; building a sustainable and efficient health system; reduce population morbidity and mortality; expand family planning services. The strategy adopted to achieve these objectives emphasizes the rational and judicious expansion and development of health centres. At the level of these health centres, ensure an integrated offer of socio-health activities (Minimum Activity Package = PMA). ART includes quality care with curative, preventive and promotional activities covering the basic needs of the population [10]. NPCs are one of the key components of the LDC. They occupy a prominent place in the priority health needs of mothers and children. The implementation of the health sector policy has been satisfactory on the whole (creation and operationalization of community health structures as well as the strengthening and revitalization of built structures). Despite these efforts, Mali is experiencing a worrying maternal, newborn and child health situation. As a result, the quality of care provided during pregnancy and its outcome could have a significant impact.

OBJECTIVES

The aim was to assess the quality of the content of antenatal consultations (PNCs) at the hospital in Gao (Mali).

MATERIALS AND METHODS

This was a prospective, descriptive, cross-sectional, analytical evaluative study that took place from October 1, 2017 to March 31, 2018 in the obstetrics and gynecology department of the GAO hospital (Mali).

The study population: These were the pregnant population of the city of Gao and the staff in charge of antenatal consultations (doctor, midwife, obstetrician nurse).

Sampling: We used the technique of convenience sampling.

Inclusion criteria: All pregnant infants seen in NPC during the study period, as well as all caregivers authorized to perform NPC, were included in the study.

Non-inclusion criteria: Were not included in the study, parturients and any pregnant women or health workers who did not agree to give consent.

Sampling technique: We carried out observation of the NPC, direct maintenance and documentary exploitation. This allowed for systematic recruitment of all NPC cases performed during the survey period that met the inclusion criteria: the interviewer was present throughout the NPCs to observe them, or to interview directly with the pregnant and health worker during the NPC.

The Data Collection Technique: The protocol consisted of a discrete non-participant observation of NPCs with note-taking by means of an individual, standardized and previously tested questionnaire. The questionnaire was then completed by consulting media such as CPN notebooks and midwives' consultation registers, but also after interviews with both the caregiver and the patient.

Variables related to NPC procedures: The variables studied were: identification of the person who took care of the pregnant; reception; interrogation; physical examination; the request for additional tests: rhesus blood grouping, CBC, EMMEL test, rubella and toxoplasmosis serologies, BW (VDRL, TPHA), Albumin/sugar, obstetric ultrasound, HIV serology, blood glucose, Preventive care (prevention against malaria, iron and folic acid supplementation), tetanus vaccination, advice to be given; risk factors; the reference in case of need.

The Data Analysis and Processing Plan: The data were entered into Epi Info under an input mask developed on the basis of the questionnaire. The data was then exported for analysis under STATA 14.1. Once the results were generated in SATA, the figures and graphs

were produced in Microsoft Excel 2013. We did not perform a statistical test due to the nature of the sampling and the purpose of the study.

Ethical considerations: Respect for ethics and medical deontology was an integral part of the present study, which complied with compliance with the following aspects: Administrative authorization, community permission through village chiefs and councillors and members of the hospital board of directors, free individual verbal consent of individuals at the time of the survey.

RESULTS

Epidemiological aspects

During the study period from 1 October 2017 to 31 March 2018, 414 antenatal consultations were carried out at the maternity ward of Gao Hospital. Of these, 122 cases met the inclusion criteria (29.5%). The 122 cases of NPC were observed at different times of pregnancy, so 6% (7 cases) were observed in the first trimester, 22% (27 cases) in the second trimester of pregnancy and in more than 7 out of 10 cases (72%) NPC was observed while the pregnant was in the third trimester of pregnancy. The average waiting time for pregnant women was between 15 and 20 minutes and the average duration of antenatal consultations was 10 minutes. The age group between 21 years and 30 years was the most represented in our study with a rate of 67%. Two types of caregivers provided NPCs during the study: midwives (82 cases) and obstetric nurses (40 cases). In our study, the Sonrhaï were mostly represented. Indeed, more than one in two pregnant women belonged to this socio-cultural group (53.2%). Among pregnant women, less than 5% were single and more than 91% were married. Themajority of women who were seen in CPN were not in school (more than 55% of them), those with a secondary level accounted for less than 40% and none had a higher level of education. The vast majority of women seen in CPN were housewives (nearly 60%) and those with civil servant status represented less than 5% of the entire sample. These epidemiological aspects are summarized in Tables 1, Figures 1, 2 and 3.

Table 1: Distribution of pregnant women according to their socio-cultural background

Age range	**Staff**	%
14-20 years old	28	23
21-30 years old	82	67
More than 30 years	12	10
Total	122	100
Ethnic group	**Actual**	**%**
Sonrhaï	**65**	53,2
Fulani	8	6,5
Malinke	4	3,2
Bozo	2	1,6
Bambara	10	8,1
Dogon	13	10,6
Tamashek	17	10,2
Other	3	2 ,4
Total	**122**	**100**
Status	**Staff**	**%**
Bachelor	6	4,9
Bride	112	91,8
Widow	1	0,8
Divorcee	3	2,5
Total	**122**	**100**

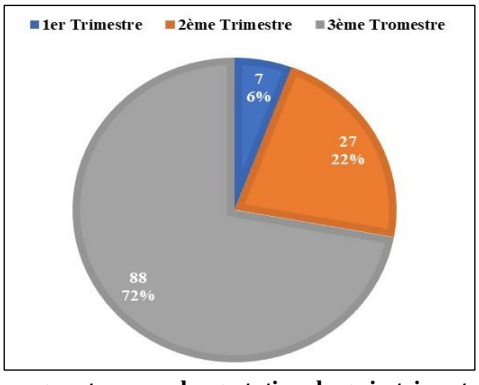

Figure 1: Distribution of pregnant women by gestational age in trimester at the time of interview

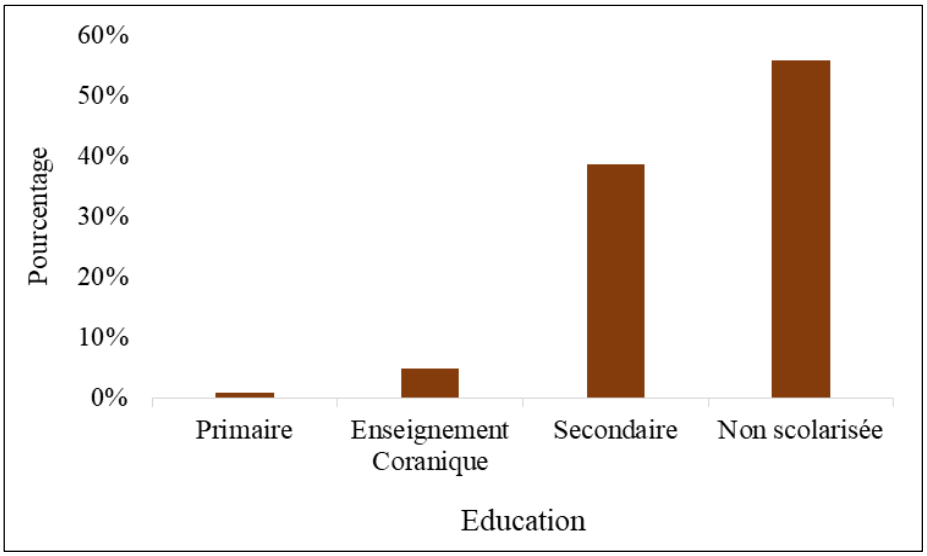

Figure 2: Distribution of pregnant women seen in NPCs by type and level of education

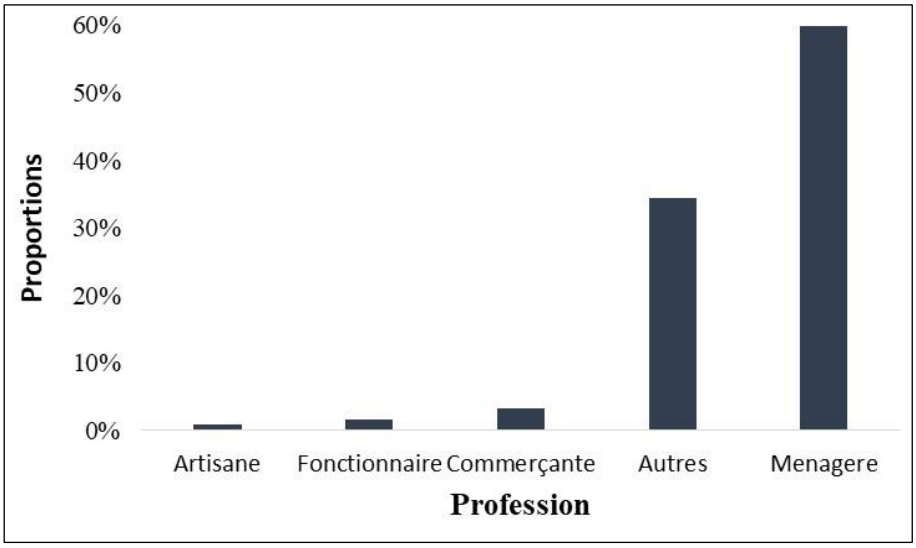

Figure 3: Distribution of pregnant women seen in NPCs by occupation and socio-professional category

Clinical aspects

The childless were 30% alive (37/122); Those with only one living child accounted for 24% of cases (29/122) and 10 of them had 5 or more children. Primiparous women accounted for less than 15%. Of these, 72% of pregnant women were seen during the 3rd trimester of pregnancy. Asthma was the most prevalent antecedent, but most pregnancies had no medical history. the majority of NPCs were performed by a midwife (67%).

The results show that 100% of the NPCs performed in the first trimester of pregnancy contain the measurement of blood pressure, weight, the reference for the haemoglobin level as well as the prescription of folic iron -A cide and explanations on the intake of folic iron-A cide. But on the other hand, some important questions or advice are not offered to pregnant women. It can be seen that 100% of the NPCs performed in the second trimester of pregnancy contain the reference for the haemoglobin level as well as the prescription of iron folic acid and explanations on how to take it. However, it can also be read that BP and weight were not systematically measured and some important questions or advice were not asked or given to pregnant women. Questions about danger signs were not asked of the pregnant woman. Visits carried out in the third trimester of pregnancy show that key advice is not given to pregnant women who come for consultations. Weight gain and BP are also slightly lower in pregnant women. Regardless of the period of pregnancy, urine testing is only offered to a minority of pregnant women. Advice on the importance of postnatal care is not given. The prescription of iron and folic acid as well as the achievement or reference for haemoglobin levels were carried out at 100% during the three trimesters of pregnancy. These clinical aspects are presented in Tables 2, 3, Figures 4, 5, 6 and 7.

Table 2: Distribution of Pregnant Infants by Parity

Parity	**Staff**	**%**
Primiparus	18	14,7
Pauci paré	15	12,3
Multiparous	54	44,3
Large multiparous	35	28,7
Total	122	100
Gestational age	**Frequency**	**%**
First Trimester	7	5.8
Second Trimester	27	22.1
Third Quarter	88	72.1
Total	122	100
Number of NPCs	**Actual**	**%**
1	44	36.1
2	30	24.6
3	21	17.2
4	22	18.0
5	4	3.3
6	1	0.8
Total	122	100
Qualification of NPC personnel	**Actual**	**%**
Midwife	82	67
Obstetrician Nurse	40	33
Total	122	100

Table 3: Index of PNC in pregnant women seen during the three trimesters of pregnancy

Interventions	**Quarter 1**	**Quarter 2**	**Quarter 3**
Prescription or administration of VAT	85.7%	96.3%	100.0%
MT control	100.0%	92.6%	100.0%
Weight measurement	100.0%	96.3%	100.0%
Explanation of taking iron tablets	100.0%	100.0%	100.0%
Prescription or donation of iron and/or folic acid	100.0%	100.0%	100.0%
Verification for conjunctival pallor for anemia	85.7%	92.6%	97.7%
Achievement or reference for haemoglobin level	100.0%	100.0%	94.3%
Advice on childbirth at the health centre	57.1%	92.6%	93.1%
Childbirth counselling with a health worker	14.3%	44.4%	41.4%
Conduct or reference for urine test	14.3%	33.3%	37.9%
Advice on background and transport for childbirth	14.3%	22.2%	33.3%
Danger Sign Question: Fetal Movements	14.3%	18.5%	19.5%
Question about other danger signs	0.0%	11.1%	5.7%
Danger Sign Question: Bleeding	0.0%	0.0%	3.4%
Advice on visiting the health centre if you have a headache or blurred vision	0.0%	3.7%	3.4%
Advice on visiting the health centre if you have a fever	14.3%	3.7%	3.4%
Abdominal palpation for urinary globe	14.3%	3.7%	3.4%
Tips on the visit in case of bleeding	0.0%	0.0%	2.3%
Advice received on postnatal care assistance	0.0%	0.0%	1.1%
Ask for a fever as a warning sign	0.0%	0.0%	1.1%
Return to the consultation if the face or hands are swollen	0.0%	0.0%	1.1%
Ask for warning signs like swollen face and hands	0.0%	0.0%	1.1%
Postnatal Care Counselling	0.0%	0.0%	1.1%
Advice on visiting the health centre if swelling of the face or hands	0.0%	3.7%	1.1%

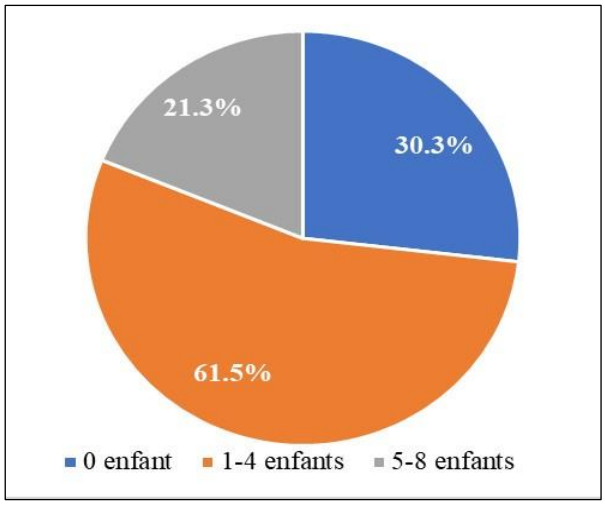

Figure 3: Distribution of Pregnant Infants by Number of Children Living in Classrooms

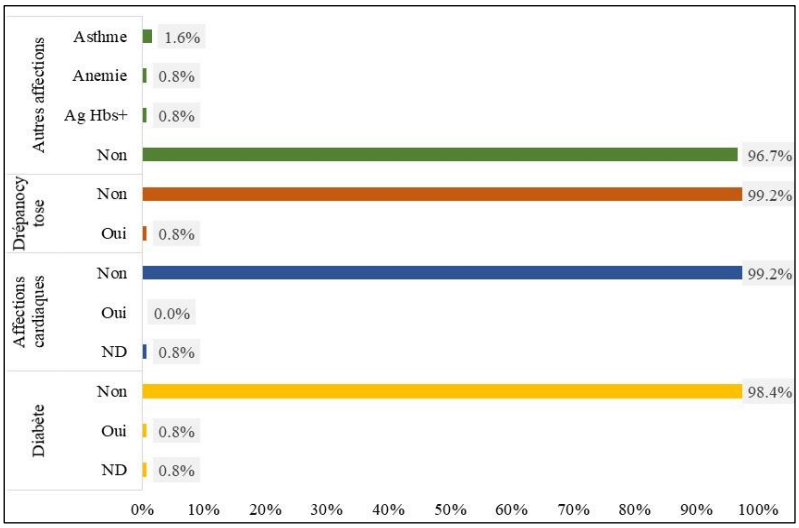

Figure 4: Distribution of pregnancies by medical history or absence

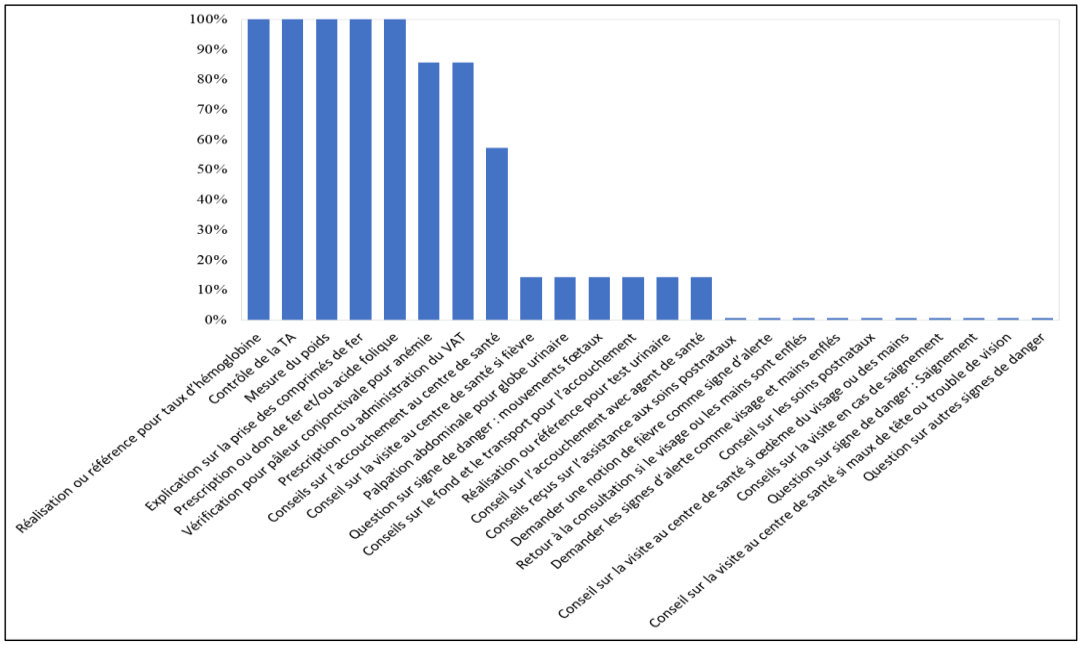

Figure 5: PNC index in pregnant women seen in the first trimester of pregnancy

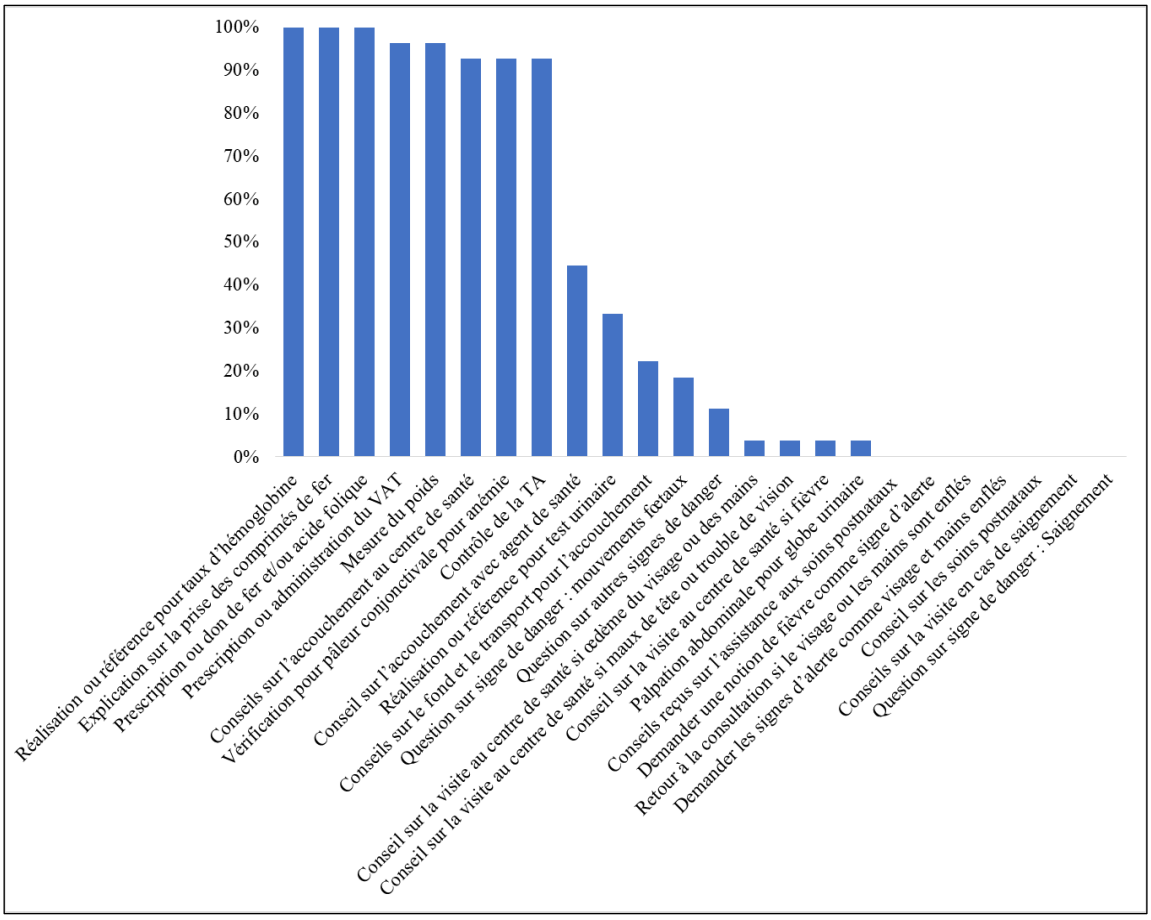

Figure 6: PNC index in pregnant women seen in the second trimester of pregnancy

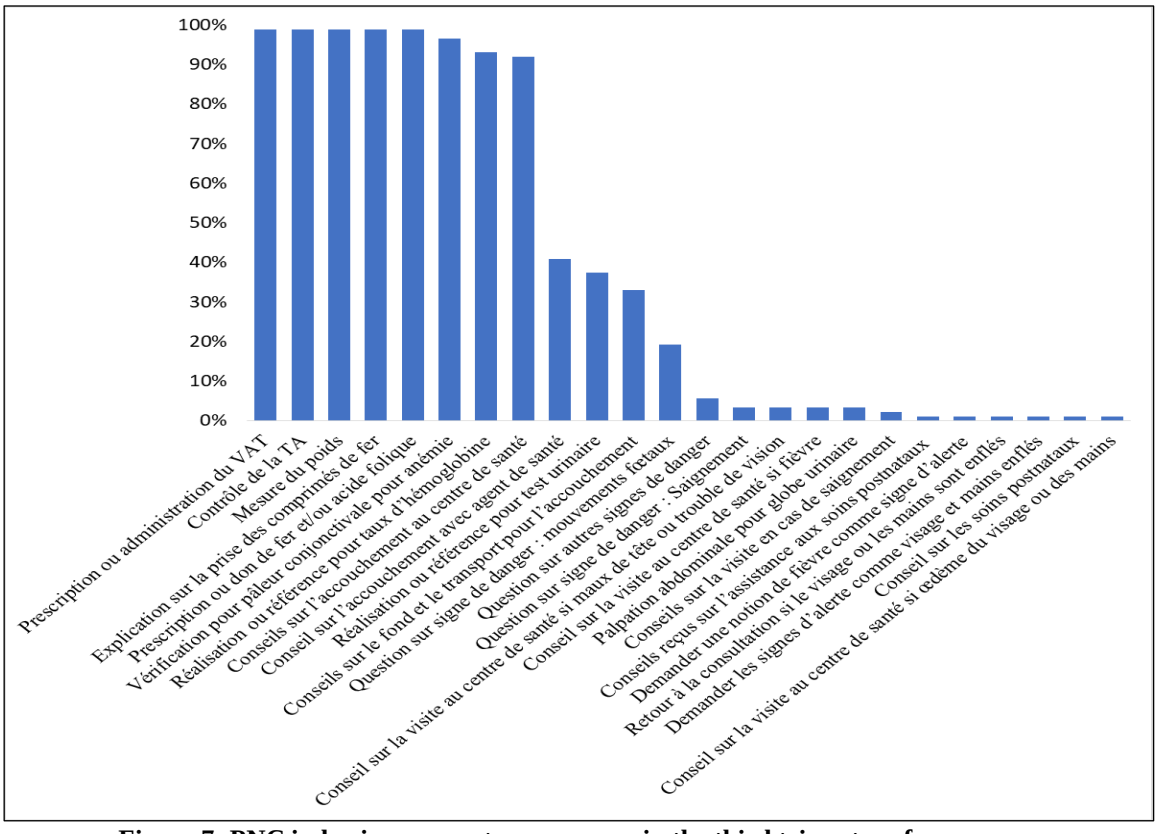

Figure 7: PNC index in pregnant women seen in the third trimester of pregnancy

DISCUSSION

Epidemiological aspects

In our study, the Sonrhaïs were mostly represented. In fact, more than one in two pregnant women belonged to this socio-cultural group, 53.2%. The majority of our pregnant women were out of school or in high school, i.e. 55% respectively; 38%. These rates are comparable to those of COULIBALY SIDY [18] who had found at ASACOBOUL II 54.2% of pregnant women who were not in school and 27% who had primary education. According to the World Fertility Survey, fertility is inversely proportional to women's educational attainment; Uneducated women have on average 2 times as many children as those with 7 or more years of schooling [5]. The household profession was the most represented in our study, i.e. 60% of the cases, and 71% of these housewives were married out of a total of 91.8%. This result could be explained by an influence of the household on educational attainment. This rate is lower than that of Sangaré. F [8] and Traoré. I [4] who had found 90% and 96.5% of married pregnant women respectively at the referral health centre of Commune IV and at ADASCO. In our study, 44.3% of our pregnant women had four or more children and 28.7% had already had more than six children. These rates are respectively higher than those of SANGARE F [8]: 39.3% and 29.4% at the referral health centre of commune IV. Knowledge of obstetric history is essential in the management of pregnant infants; because it determines the course of action to be taken for a favourable outcome of the pregnancy. Obstetric histories were sought in all of our pregnant women. Thus, 30.3% of these were primingests, a higher rate than that of Traoré. I to ADASCO [4]: 21.0% And Maiga. A.S to Csref CI [6]: 29.0% and lower than those of Sangaré. F. to Csref CIV [8]: 31.3%. Large multi-gestures represented 21.3% of the sample, a higher rate than that of Maiga. A.S to Csref CI [6]:7.0% and to those of Traoré. I to ADASCO [4]: 16.5% and Sangaré. F at Csref CIV [8]:12.6%, Large multiparous women represented 28.7% of pregnant women, this result is higher than those of Traoré. I at ADASCO [4]: 7.5%, Sangaré at Csref CIV [8]: 6.1% and Maiga. S at Csref CI [6]: 6.0% This aspect is very important to determine because perinatal mortality is lower for the 2nd, 3rd and^{4th}pregnancies. It is higher for the 1st pregnancy and increases from the 5th pregnancy [24]. In our study, the 21 to 30 age group was the most represented with a rate of 67%, 23% of pregnant women were between 14 and 20 years old and 10% were over 30 years old, this result is higher than those found by Coulibaly Sidy [18] which finds 61.2% respectively; 29,1%; 9,7%. This result could be explained by a wide awareness of NPC among this segment of the population.

Clinical aspects

In our study, NPC activities were performed by midwives in 67% and obstetrical nurses in 33% of cases, this could be explained by the insufficient number of midwives in the hospital of Gao. This result is comparable to those found by COULIBALY SIDY [18] to ASACOBOULII. According to WHO standards, the first NPC should be performed by a physician (obstetrician-gynecologist) to confirm the diagnosis of pregnancy and to manage the one that carries a risk [25]. In the history constituting the risk factors sought in pregnant women, high multiparity was found in 28.7%, followed by asthma in 1.6% and high blood pressure in 0.8% of cases, almost all pregnant women had no particular history. However, in 2003 none of these parameters were explored by Fomba. S [20] to MIPROMA. During this study, most pregnancies were seen in the third trimester with a rate of 72%, less than 18% of pregnancies had had 4 PNCs. Other elements of physical examination such as weight gain, BP, conjunctival examination, abdominal palpation, auscultation of BDCF, vaginal examination were performed in most pregnant women. These results are similar to those of Sangaré. F.au Csref CIV [6] and COULIBALY SIDY. To ASACOBOULII [18]. Rhesus grouping, Emmel test, BW, albumin/sugar in urine were systematically requested from the 1st prenatal consultation. The reference for the haemoglobin level was requested in 100% of cases, this result is higher than those of SANGARE F [6]: 75.7% and COULIBALY SIDY [18]: 51.5% respectively at the reference health centre of Commune IV and ASACOBOUL II. Blood/rhesus typing was required in all pregnant women in our study, i.e. 100%. This result is comparable to those of Goita N. At the reference health centre of commune I [21] that 99% had had, this would be explained by the fact that blood grouping is systematic. The majority of pregnant women (99%) benefited from the prescription of iron and folic acid as well as an explanation of their intake. This rate is higher than that of SANGARE F. at the referral health center of Commune IV [6]: 73.3%, MAIGA A.S at the referral health center of Commune I [8]: 82%. This result indicates that iron and folic acid supplementation was assured. Compared to malaria chemoprophylaxis, MS (Sulfadoxine Pyrimethamine) was not available as well as the antiparasitic. HIV/AIDS testing for the PMTCT (Mother-Child Transmission of HIV) program was 100% in our study. This rate is better than that of COULIBALY O. at the referral health centre of Commune I [19]: 13.5%. This result could be explained by the widespread awareness of our pregnant women about mother-to-child transmission of HIV and the availability of rapid tests in hospitals. Ultrasound is now the most important means of diagnosing and monitoring pregnancy. It was requested in 100% of cases, a rate slightly higher than that of COULIBALY SIDY at ASACOBOUL II [18] which had found 74.5%. This high rate could be explained by the availability of the ultrasound machine in the hospital. In our study, more than 80% of our pregnant women were vaccinated against tetanus. Some questions or advice about warning signs were not explained to pregnant women in most cases. In our study, the majority of pregnant women were not informed about the conditions of childbirth. However, this result is better than Fomba's. S at MIPROMA [20] where all the pregnant women had

stated that nothing particular had been said to them about the conditions of childbirth.

Limitations of the study:

As would be expected with any scientific research, we faced financial difficulties in recruiting full-time interviewers to cover all antenatal cases conducted during the study period. This constraint had not been anticipated at the time of the choice of the theme, or at least it was underestimated. It resulted in the reasoned choice of two days in the week. The constraints were also related to the manner in which the investigation was conducted, although discreet, the presence of the investigator had more or less an effect on the conduct of the NPC. The language (language) between the interviewer and the pregnant women was also problematic.

CONCLUSION

Our study carried out at the hospital from October 2017 to March 2018 allowed an analysis of the quality and especially the observation of the NPCs. Almost all NPCs were performed by midwives (skilled personnel). Around the clinical examination, certain parameters such as cardiac and pulmonary auscultation, the use of the speculum, and the assessment of the pelvis in the third trimester were underexplored during the NPCs. Questioning of medical and obstetrical history uncovered some risk factors that were not adequately considered. Additional tests (rhesus grouping, Emmel test, BW, albumin/sugar in urine) were not systematically requested at the first consultation. HIV testing after counselling was requested in the majority of cases with 100%.a prescription of preventive care (tetanus vaccination, iron and folic acid supplementation was of high level. Procedural deficiencies were noted, namely the failure to perform some important physical examinations and additional examinations.

Advice on warning signs and information on the conditions of childbirth is lacking in almost all NPCs.

The study shows that the evaluation of the quality of services is an absolute necessity for the improvement of services in integrated reproductive health care centres.

As a result of these findings, our results can be used to improve the quality of care in the hospital.

Conflict of interest: None.

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