



Research Article

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## Impediments of Infertility Units in Low-Income Countries: Two Hospitals Examples in Senegal

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### Abstract

**Objectives:** The aim of this study was to identify impediments of quality of infertility care units.

**Patients and methods:** This is a retrospective study leaded in two hospitals in Dakar (Senegal): Pikine National Hospital (PNH) and Aristide Le Dantec Teaching Hospital (LDTH) for 18 months from January the 1st 2015 to June 30<sup>th</sup> 2016. It included all couples presenting in our services for desire for pregnancy.

**Results:** The mean age of women was 32.7 years for women and 40.4 years for men. More than half of couples (51.3%) consulted after 5 years of attempt at conception. In both hospitals andrological history was not reported. Physicians prescribed semen analysis to 77.3% of couples at LDTH and in 31.5% at PNH. Antral follicular count (AFC) was not done in any of the 252 patients. At the LDTH, 75% of patients carried out the prescribed paraclinic exams.

**Conclusion:** In our study we have identified many impediments: unmet need in treating infertility, lack of physicians training, immigration and other social phenomenon (using alternative medicine, non-adherence of spouse in care). Access to infertility treatment is also limited by economics barriers. Physicians' training is the cornerstones of quality of services.

### Keywords

Infertility; Care; Diagnostic evaluation; Impediments

## Introduction

Infertility is a disease, defined by the failure to achieve a successful pregnancy after 12 months or more of appropriate, timed unprotected intercourse [1]. Since 1995 reproductive health is defined as state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes [2]. Infertility is a disease of the reproductive system that causes stress within couples. It affects 10 to 15% of couples in developed countries [3], so there is a real infertility services needs in the world. However disparities exist in access to fertility care and in treatment outcomes. In low-income country, social policies and economical aspects deeply

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affect infertility units. Infertility and inadequate care cause medical, social, economic, and psychological injuries. The low-income of families restricts physician's prescriptions. The aim of this study was to identify impediments of quality of infertility care units.

## Patients and Methods

This is a retrospective study in two hospitals in Dakar (Senegal): Pikine National Hospital (PNH) and Aristide Le Dantec Teaching Hospital (LDTH) from January the 1st 2015 to June 30<sup>th</sup> 2016 (18 months). Were included in the study all couples presenting in our departments for desire for pregnancy and met the definition of infertility according to the American Society of Reproductive Medicine committee [1].

Data were collected from medical records and combined. Following parameters were studied: profile of infertile couples (type and duration of infertility, body mass index, cause of infertility), management of infertility.

We assessed diagnostic evaluation of infertility. So we studied the parameters sought in patients' history, physical examination and paraclinical tests. As exams are in charge of patients and their families, we also calculated the rate of those carried out by patients and of which we have the results.

Data were analysed using Statistical Package for Social Science software 21.0 version.

## Results

During the study period, 465 couples were received for desire for pregnancy (253 in LDTH and 212 in PNH). Seventy-seven of these couples (16%) were excluded of study because of irregular intercourse due to immigration of one of the spouses.

The number of patients cared for during this period were 2636. The proportion of infertility consultation was 14.7%.

At LDTH, we noted unsuitable clinical and paraclinical check-up for 136 patients (53.7%) which do not allow us to analyse these data. Then we worked on 106 medical records in this hospital.

## History and physical examination

The mean age was 32.7 years for women and 40.4 years for men. The mean duration of infertility was 6 years, more than half of couples (51.3%) consulted after 5 years of attempt to conceive. Women's weight was recorded in 97% of cases. The mean body mass index (BMI) was 26.2 kg/m<sup>2</sup>; 57.5% of women were overweight defined by a body mass index (BMI) over 25 kg/m<sup>2</sup> (Table 1).

Menstrual history, pregnancy history and women past surgery were sought for all patients.

Andrological history was not reported (childhood illnesses, previous surgery, exposures to gonadotoxins).

## Paraclinical exams

Physicians prescribed semen analysis to 77.3% couples at LDTH and in 31.5% at PNH. Eighty-two per cent of patients performed and returned their semen analysis results at the LDTH vs. 52.1% at PNH.

**Table 1:** Distribution of couples according to age groups, duration of infertility and body mass index.

Variables	Groups	Number (n)	Percentage (%)
Age (years) n=249	<30	81	32.5
	30-35	75	30.1
	≥ 36	93	37.4
Infertility duration (years) n=252	≤ 1	29	11.5
	2-4	93	37
	≥ 5	130	51.5
BMI (Kg/m <sup>2</sup> ) n=94	<25	40	42.5
	25-30	36	38.3
	> 30	18	19.2

**Table 2:** Distribution of patients according to rates of paraclinical exams prescribed and those carried out.

Hospital	Paraclinical exam	Prescribed n (%)	Done n (%)
DNTH n = 106	Semen analysis	82 (77%)	67 (81.7%)
	Hysterosalpingography	38 (36%)	35 (92.1%)
	Ultrasonography	56 (53%)	54 (96.4%)
	FSH	13 (12.2%)	10 (77%)
	LH	8 (7.5%)	6 (75%)
	Estradiol	2 (1.9%)	2 (100%)
	AMH	6 (5.6%)	5 (83.3%)
PNH n = 146	AFC	-	-
	Semen analysis	46 (31.5%)	24 (52.2%)
	Hysterosalpingography	92 (63%)	73 (79%)
	Ultrasonography	118 (80.8%)	85 (72%)
	AFC	-	-

No patient from PNH had an ovarian reserve evaluation (Table 2). Antral follicular count (AFC) was not done in any of the 252 patients.

At LDTH, 75% of patients carried out the prescribed paraclinic exams. At PNH, semen analysis was done only by 52.2% of the patients to whom it was prescribed.

### Abnormalities found after diagnostic evaluation

Of all semen analysis results, 56% predicted male subfertility according to World Health Organization (WHO) standard. We found 5.6% of azoospermia.

Hysterosalpingography reported 61% of tubal occlusion (unilateral or bilateral, complete or partial).

Polycystic ovary syndrome (PCOS) was noted in 23% of women.

Other abnormalities were noted: endometriosis (4.6%), hyperprolactinaemia (3%), premature ovarian failure (2.7%).

### Treatment

Stimulation using clomiphene citrate and gonadotrophins were used respectively in 12.1% and 0.4% of cases, laparoscopic surgery in 10% of cases.

The clinical pregnancy rate was 10.3%. Men were referred to andrology consultation. In case of need for a gamete donor (azoospermia or premature ovarian failure), the couple was oriented towards European hospitals.

### Discussion

Care in these two hospitals included various areas as contraception, breast, pregnancy follow-up, gestational trophoblastic diseases, menopause and other gynaecological diseases. In our study,

the proportion of infertility consultation was 14.7%. It is then an important demand for care that cannot be ignored. According to Messinis and al, there is general agreement that in developed countries the incidence of infertility is less than 20% of newly married couples with an approximate average around 15% and this prevalence of infertility has remained stable [4]. Subfertility affects approximately 15% of women of reproductive age at any given time worldwide [5]. We cannot really compare our results to these because there is a recruitment bias. Our study is done at the hospital and not within population. But these 14.7% reflects a considerable need for care.

A diagnostic evaluation is indicated for women who fail to achieve a successful pregnancy after 12 months or more of regular unprotected intercourse [1]. Nevertheless earlier evaluation is warranted after six months of unsuccessful efforts to conceive in women over age 35 years due to the observed related age decline in fertility [6]. In our study, we excluded 16% of couples because of lack of regular cohabitation. Immigration is a social phenomenon in certain countries, mostly in low-income countries. Creation of a family is a basic human right [7] an not caring for 16% of request creates an unmet need and a disparity. Like age of women, an irregular cohabitation must warrant a specific strategy of care. It is the responsibility of physicians to determine a strategy of care according to duration of cohabitation: what paraclinical exam, what kind of treatment when no other abnormality is identified?

We noted a delay in consultation, 51.3% of couples consulted after 5 years of attempt to conceive. The duration of infertility, as well as the age of the patient, is a major prognostic factor for the success of infertility treatment [8]. This delay may be due to the use of alternative medicine. Thus women arrive older and financially depleted. There is an underestimation of the impact of age on fertility [9]. It is the responsibility of physicians to improve public awareness about infertility care.

History and physical examination were not complete. In both hospitals andrological history was not reported and at PNH the weight was not reported for any patient. This exhibits a training lack in the management of infertility. A better organization of work with semi-directive records during the consultation could improve assessment and diagnostic evaluation of infertility. Imaging and test labs were uncompleted. More often, physicians stopped investigations when pathology is found even if it is not the one possible cause. While diagnostic evaluation of infertility should include assessment of ovulatory function, structure and patency of female reproductive tract and semen analysis [6]. This situation can be explained by lack in training of physicians. However it can be related to the income of the patients, the physicians trying to find a compromise between cost and diagnosis. Only 52.2% of patients carried out their semen analysis at PNH. Spousal participation in treatment is crucial; it's a social problem to be resolved by summoning the both spouses to the consultation.

## Conclusion

In our study we have identified many impediments: unmet need in treating infertility, lack of physicians training, immigration and other social phenomenon (using alternative medicine, non-adherence of spouse in care). Access to infertility treatment is also limited by economics barriers.

Our policies and universities need to put more emphasis on the management of infertility. Training and developing insurance coverage will improve infertility care.

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