

## Characterization of couples treated in infertility consultations

Caracterización de parejas atendidas en consultas de infertilidad

Caracterização dos casais atendidos em consultas de infertilidade

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### ABSTRACT

**Introduction:** infertility has become an issue of increasing relevance in contemporary society, affecting a high number of couples of reproductive age. **Objective:** to characterize the couples treated in infertility consultations at the Policlínico Docente Miguel Montesino Rodríguez, Fomento municipality, Sancti Spíritus, Cuba, during the period 2021-2023. **Method:** an observational, descriptive and retrospective study was carried out, with a cross-sectional design between January 2021 and December 2023, which included a total of 77 couples treated in infertility consultations at said polyclinic. A census sampling was used, with consideration of inclusion and exclusion criteria. Demographic and clinical variables were analyzed. The research respected ethical principles and sought to contribute to the understanding of infertility, with the identification of risk factors and care needs in the region. **Results:** patients aged 30-34 years

(51.2%) were predominant, with a personal history of hypertension (36.2%) and bronchial asthma (16.8%). Primary infertility was the most common cause (55.8%). In women, tubal disorders were the main cause (38.6%) while in men, erectile disorders were the main cause (43.2%). 27.9% of couples used hormones to prevent conception. **Conclusions:** the research indicates that infertility is a multifactorial problem that requires a comprehensive and personalized approach. It highlights the importance of considering physical, emotional and psychological aspects, as well as the need for preventive medical care and specific treatments for couples.

**Keywords:** infertile couple; infertility; assisted reproduction; reproductive medicine



**RESUMEN**

**Introducción:** la infertilidad se ha convertido en un tema de creciente relevancia en la sociedad contemporánea, con afectación de un número elevado de parejas en edad reproductiva. **Objetivo:** caracterizar las parejas atendidas en consultas de infertilidad del Policlínico Docente Miguel Montesino Rodríguez, municipio de Fomento, Sancti Spíritus, Cuba, durante el periodo 2021-2023. **Método:** se realizó un estudio observacional, descriptivo y retrospectivo, con diseño transversal entre enero de 2021 y diciembre de 2023, que incluyó un total de 77 parejas atendidas en consultas de infertilidad de dicho policlínico. Se empleó un muestreo censal, con consideración de criterios de inclusión y exclusión. Se analizaron variables demográficas y clínicas. La investigación respetó los principios éticos y buscó contribuir a la comprensión de la infertilidad, con la identificación de factores de riesgo y necesidades de atención en la región. **Resultados:** predominaron los pacientes entre 30 y 34 años (51,2 %), los antecedentes patológicos personales de hipertensión (36,2 %) y asma bronquial (16,8 %). La infertilidad primaria fue la más común (55,8 %). En las mujeres las afecciones de las trompas fueron la principal causa (38,6 %) mientras que en los hombres fueron los trastornos de la erección (43,2 %). El 27,9% de las parejas utilizó hormonas para evitar la concepción. **Conclusiones:** la investigación señala que la infertilidad es un problema multifactorial que demanda un enfoque integral y personalizado. Resalta la importancia de considerar aspectos físicos, emocionales y psicológicos, así como la necesidad de atención médica preventiva y tratamientos específicos para las parejas.

**Palabras clave:** pareja infértil; infertilidad; reproducción asistida; medicina reproductiva

**RESUMO**

**Introdução:** a infertilidade tornou-se um tema de crescente relevância na sociedade contemporânea, afetando um elevado número de casais em idade reprodutiva. **Objetivo:** caracterizar os casais atendidos nas consultas de infertilidade na Policlínica Docente Miguel Montesino Rodríguez, município de Fomento, Sancti Spíritus, Cuba, durante o período 2021-2023. **Método:** foi realizado um estudo observacional, descritivo e retrospectivo, com desenho transversal entre janeiro de 2021 e dezembro de 2023, que incluiu um total de 77 casais atendidos em consultas de infertilidade na referida policlínica. Foi utilizada amostragem censitária, considerando critérios de inclusão e exclusão. Variáveis demográficas e clínicas foram analisadas. A pesquisa respeitou os princípios éticos e procurou contribuir para a compreensão da infertilidade, com a identificação de fatores de risco e necessidades de cuidados na região. **Resultados:** predominaram pacientes entre 30 e 34 anos (51,2%), história patológica pessoal de hipertensão (36,2%) e asma brônquica (16,8%). A infertilidade primária foi a mais comum (55,8%). Nas mulheres, as condições tubárias foram a principal causa (38,6%), enquanto nos homens foram os distúrbios de ereção (43,2%). 27,9% dos casais usaram hormônios para prevenir a concepção. **Conclusões:** a pesquisa indica que a infertilidade é um problema multifatorial que exige uma abordagem abrangente e personalizada. Destaca a importância de considerar os aspectos físicos, emocionais e psicológicos, bem como a necessidade de cuidados médicos preventivos e tratamentos específicos para casais.

**Palavras-chave:** casal infértil; infertilidade; reprodução assistida; medicina reproductiva

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## INTRODUCTION

Infertility has become an increasingly relevant issue in contemporary society, affecting between 15 and 20% of couples of reproductive age. In the current context, the advance of assisted reproductive technologies has increased the demand for specialized services transforming the way in which couples face this challenge. However, the experience of encountering obstacles to procreation can be frustrating and have a significant emotional impact.<sup>(1,2)</sup>

On the other hand, Rodríguez, et al.<sup>(2)</sup>, states that infertility is defined as the inability to fertilize naturally or to carry a pregnancy to term after one year of unprotected sexual activity and is caused by male, female or combined factors. Moreover, according to the World Health Organization (WHO), between 60 and 80 million couples worldwide face difficulties in getting pregnant. In Spain, around 15% of couples of reproductive age experience infertility problems.<sup>(2)</sup>

In this sense, according to Mora-García, et al.<sup>(3)</sup>, the fertility rate in Cuba has experienced a pronounced decline in recent decades, which has led to a situation of low birth rate. At the same time, it is estimated that between 12% and 14% of the population faces fertility problems. As a result, the country is undergoing an advanced demographic transition, characterized by high life expectancy at birth and low infant mortality, similar to patterns observed in developed countries. Therefore, this demographic progress is intertwined with a process of social development based on remarkable achievements in education, health, employment and social security, with equitable benefits for the majority of the population.<sup>(2,3)</sup>

Likewise, in the province of Sancti Spiritus, one of the three most aged provinces in Cuba, there is a tendency to a decrease in the birth rate, according to data recorded by the National Office of Statistics and Information (ONEI). In fact, according to reports, during the last few years the number of births has decreased by 126 births per year, while deaths have increased during this period at a rate of 91 per year.<sup>(4)</sup>

Additionally, based on data compiled by the Maternal and Child Care Program (PAMI) of the municipality of Fomento in that province, during the period 2021-2023, a total of 77 couples were attended for infertility consultations. These numbers reflect an increasing trend in the number of cases per year, suggesting that this health problem is becoming more and more common in the population. Therefore, this situation highlights the importance of investing in specialized care services and prevention programs to address this public health challenge.<sup>(5)</sup>

In relation to this problem, since 2007, a system of care for infertile couples has been implemented in Cuba, where it was shown that factors such as delayed childbearing, decreased semen quality, exposure to environmental factors and lifestyles can contribute to infertility.<sup>(6)</sup> It is crucial to note that this problem affects both partners in a couple, so Reproductive Medicine professionals should consider a comprehensive and simultaneous point of view when evaluating both partners, as pointed out by Reyes-Tápanes, et al.<sup>(7)</sup>



Despite its importance, there are few studies on infertility at the primary level of care in Fomento municipality, which underscores the need for further research on this topic. This level is the main setting where these cases are most effectively detected and attended and provides the opportunity to investigate this population of childbearing age, including those who have not sought help at higher levels.

Consequently, there is little understanding of the factors contributing to infertility in the local population and its relationship to low birth rates. This lack of information may limit the effectiveness of current interventions and programs, which are often not aligned with the specific needs of affected couples. It is therefore essential to investigate the determinants of infertility in the Fomento municipality. This analysis will not only allow the development of more effective strategies to improve care for infertile couples, but will also help to address the challenge of low birth rate in this region.

Therefore, the objective of this article is to characterize the couples attended in infertility consultations at the Policlínico Docente Miguel Montesino Rodríguez, municipality of Fomento, Sancti Spíritus, Cuba, during the period 2021-2023.

## METHOD

An observational, descriptive and retrospective study with a cross-sectional design was carried out from January 2021 to December 2023. The universe consisted of all couples attended in infertility consultations at the Miguel Montesino Rodríguez Polyclinic (N=77) who gave informed consent and who did not leave the infertility consultation or transfer to another level of care during the defined period. In total, 77 couples were included (n=77). The sampling was considered census sampling since we worked with all available cases.

Inclusion criteria: all couples seen in infertility consultations at the Miguel Montesino Rodríguez Polyclinic during the research period who agreed to participate in the study.

Exclusion criteria: any couple that left the infertility clinic or was transferred to another level of care during the research period.

Demographic and clinical variables were analyzed:

- Age group: 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40 years and older.
- Personal pathological history (PPP): diabetes mellitus, arterial hypertension, heart disease, genetic diseases, endocrine-metabolic diseases, others.
- Type of infertility: primary, secondary.
- Causes of infertility: tubal, ovarian, uterine, testicular, erectile disorders and sexually transmitted infections (STIs).
- Type of previous contraception: barrier methods, intrauterine devices, hormonal, biological, none.



Data collection was based on observation and documentary analysis of the clinical histories prepared in the consultation room.

The information was processed using a database created in Microsoft Excel. The results were presented in contingency tables, through summary measures for quantitative variables, absolute frequency and percentage.

The research respected the postulates of ethics and always had a scientific purpose. The participants signed the informed consent form. The characteristics of the research and its innocuousness were explained. Approval was obtained from the Ethics Committee of the institution where the research was carried out.

## RESULTS

According to the data presented in Table 1, most of the patients were found in the 30-34 age group with a representation of 51.2% of the total, followed by the 35-39 age range (31.8%).

**Table 1:** Couples according to age groups and sex

Age	Sex				Total	
	Male		Female		No.	%
	No.	%	No.	%		
20 to 24	1	1,2	-	-	1	0,6
25 to 29	2	2,5	4	5,1	6	3,8
30 to 34	37	48,0	42	54,5	79	51,2
35 a 39	28	36,3	21	27,2	49	31,8
40 or more	9	11,6	10	12,9	19	12,3
<b>Total</b>	<b>77</b>	<b>50,0</b>	<b>77</b>	<b>50,0</b>	<b>154</b>	<b>100,0</b>

Source: medical records.

Table 2 shows that the patients had a number of common personal pathological antecedents, where arterial hypertension was the most frequent with 36.2 %, followed by bronchial asthma with 16.8 %, obesity with 11.6 % and diabetes mellitus with 11.2 %.



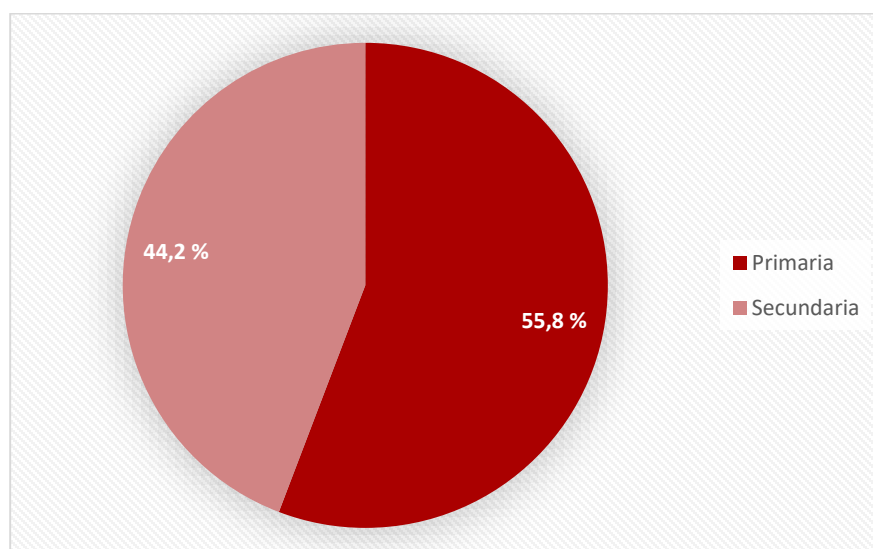
**Table 2:** Couples according to personal pathological history and sex

Personal pathologic history (APP)*	Sex				Total	
	Male		Female		No.	%
	No.	%	No.	%		
Diabetes mellitus	15	13,2	11	9,2	26	11,2
Arterial hypertension	38	33,6	46	38,6	84	36,2
Cardiopathies	9	7,9	4	3,3	13	5,6
Genetic diseases	2	1,7	5	4,2	7	3,0
Obesity	12	10,6	15	12,6	27	11,6
Bronchial asthma	18	15,9	21	17,6	39	16,8
Other	6	5,3	9	7,5	15	6,4
No reference	13	11,5	8	6,7	21	9,0
<b>Total</b>	<b>113</b>	<b>48,7</b>	<b>119</b>	<b>51,2</b>	<b>232</b>	<b>100,0</b>

\*A person can have two or more PPPs.

Source: medical records.

According to the findings shown in Figure 1, the most frequent form of infertility was primary infertility, with a remarkable 55.8 % of the total number of cases studied.

**Graph 1:** Distribution of couples according to type of infertility.

According to Table 3, in the female sex, fallopian tube disorders were the most common cause of infertility (38.6%) of the cases studied. In contrast, in the male sex, erectile disorders were the main causes of infertility, present in 43.2% of the cases, while STIs were the most representative in both partners with 22.8%.



**Table 3:** Couples according to causes of infertility and gender

Causes	Sex				Total	
	Male		Female		No.	%
	No.	%	No.	%		
Tubal disorders	-	-	34	38,6	34	20,9
Ovarian disorders	-	-	21	23,8	21	12,9
Uterine disorders	-	-	12	13,6	12	7,4
Testicular disorders	26	35,1	-	-	26	16,0
Erection disorders	32	43,2	-	-	32	19,7
Sexually transmitted infections	16	21,6	21	23,8	37	22,8
<b>Total</b>	<b>74</b>	<b>45,6</b>	<b>88</b>	<b>54,3</b>	<b>162</b>	<b>100,0</b>

\*a person can have two or more causes of infertility.

Source: medical records.

Table 4 shows the previous use of contraceptive methods as being common among couples, in particular, it was observed that 55.8% of women used hormones to prevent conception and 24.6% used the intrauterine device (IUD). Among men, 44.1% reported the use of condoms, while 14.2% of couples reported not using any contraceptive method.

**Table 4:** Couples according to type of previous contraception and gender

Contraceptive type	Sex				Total	
	Male		Female		No.	%
	No.	%	No.	%		
Barrier methods	34	44,1	1	1,2	35	22,7
Intrauterine devices (IUDs)	-	-	19	24,6	19	12,3
Hormonal	-	-	43	55,8	43	27,9
Biological	28	36,3	7	9,09	35	22,7
None	15	19,4	7	9,09	22	14,2
<b>Total</b>	<b>77</b>	<b>50,0</b>	<b>77</b>	<b>50,0</b>	<b>154</b>	<b>100,0</b>

Source: medical records.

## DISCUSSION

This study allowed characterizing important aspects involving the Cuban Program of Care for Infertile Couples at the first level of care in the municipality of Fomento, Sancti Spíritus, Cuba.

The results of this research were relevant due to the presence of a high proportion of infertile couples in the age range between 30 and 34 years old. Research carried out by Ramírez-Morán, et al.<sup>(8)</sup> and Fernández-Borbón, et al.<sup>(9)</sup> stated that this tendency may be related to the natural decrease in fertility due to age and affirmed that infertility is a common problem in the country. Likewise, most couples postpone childbearing until an advanced age, as they prioritize financial and professional stability before procreating. This allows them to take advantage of their most fertile years and then devote their time to growing as a couple and planning a family at a time when it is easier.<sup>(10,11)</sup>





The relationship between age and fertility is a topic that has been extensively studied in the scientific literature, where it is postulated that as women age their ovarian reserve decreases, which may affect their ability to conceive naturally. In the case of men, although they do not experience such a marked decrease in fertility with age, it has been shown that there are changes in sperm quality as they age, which can also influence the reproductive capacity of the couple.<sup>(7,8,9)</sup>

The presence of chronic diseases and other PPP can exacerbate this situation. In the present study there was a predominance of arterial hypertension, bronchial asthma and endocrine-metabolic diseases. This coincides with other investigations such as those of Facondo, et al.<sup>(12)</sup> and Torres, et al.<sup>(13)</sup>, who suggest that the ingestion of certain drugs related to chronic noncommunicable diseases is associated with an increase in reproductive disorders. In particular, the use of androgenic steroids or anabolic steroids can interfere with testosterone production in the testes and lead to a significant decrease in sperm count.

In relation to the type of infertility, it was remarkable that primary infertility was the most prevalent in the sample analyzed. This finding suggested that most cases of infertility could respond successfully to hormonal therapies and other medical treatments. Such strategies have been shown to be effective in most cases of primary infertility by correcting hormonal imbalances, stimulating ovulation and improving sperm quality.<sup>(11,14,15)</sup>

On the other hand, therapeutic methods offer couples the opportunity to procreate naturally, which avoids the use of more invasive procedures such as in vitro fertilization or other assisted reproductive techniques; therefore, it is crucial that couples experiencing primary infertility seek timely medical evaluation and treatment to increase the chance of having a gestation naturally.<sup>(15)</sup>

Importantly, secondary infertility was also identified in the research as a significant concern. This poses additional challenges as it may be related to a variety of factors including hormonal problems, anatomical abnormalities and psychological factors.<sup>(4,5)</sup>

Indeed, the presence of hormonal problems or anatomical abnormalities can hinder the body's ability to maintain a pregnancy and conceive. In addition, psychological factors such as stress, anxiety or depression can influence fertility by affecting hormonal balance and the response of the reproductive system. Consequently, it is essential that couples facing secondary infertility receive a detailed evaluation that looks not only at the physical, but also at the emotional and psychological aspects.<sup>(4,6,7)</sup>

In relation to the causes of infertility, fallopian tube disorders were identified as the most common cause in women. These structures are a crucial part of the female reproductive system, as they are responsible for transporting eggs from the ovaries to the uterus. Any obstruction or damage to them can hinder or prevent fertilization and pregnancy.<sup>(10-13)</sup>

On the other hand, erectile disorders were the most prevalent in men. Erectile dysfunction refers to the inability to maintain a firm erection for sexual intercourse, which can hinder conception by interfering with the man's ability to deposit sperm into the female reproductive tract.<sup>(13,15)</sup>





Furthermore, it is essential that couples receive reproductive and contraceptive education to prevent infertility and promote good reproductive health. Most cases of infertility could be avoided if couples were properly counseled on how to maximize the chances for fertilization and how to prevent unwanted pregnancies. This includes knowing the fertile days of the menstrual cycle, using effective contraceptive methods, and seeking medical attention if reproductive problems occur.<sup>(14,15)</sup>

The fact that the use of contraceptive hormones was identified as the most common method used among women was relevant. Contraceptive hormones, whether in the form of pills, patches or injections, are a popular option due to their high efficacy in preventing pregnancy. However, it is crucial that women receive detailed information about the different types of treatments available, as well as the possible side effects and contraindications.

In addition, he highlighted the use of biological and barrier methods among the patients studied. The condom is not only an effective way to prevent unwanted pregnancies, but it is also the only contraceptive method that provides protection against sexually transmitted diseases (STDs). The importance of condom use in the prevention of STIs should be emphasized, as these infections can have serious consequences for reproductive and general health.<sup>(14,15)</sup>

Although natural or biological contraceptive methods may be an option for some couples, it is essential to consider their limitations and factors that influence their effectiveness. As some research has shown, their use is associated with a higher frequency of unwanted pregnancies, which can generate frustration and anxiety in couples. In this sense, education and training on contraceptive methods and fertility are key for couples to be able to make informed decisions about their family planning. Consequently, the authors agree that the use of more effective contraceptive methods, such as hormonal and intrauterine methods, may be a better option for couples seeking to control their fertility in a reliable and effective manner.<sup>(13,14,15)</sup>

For all these reasons, a customized design to study this issue is essential in both types of cases. Each couple may face unique challenges that require an individualized approach to identify and treat the underlying causes of their infertility. This may include comprehensive testing to assess reproductive health, psychological counseling and emotional support, as well as treatment options tailored to each couple's needs.<sup>(11,13)</sup>

In general, contraceptive education is critical to empower couples with the knowledge necessary to make informed decisions about their reproductive health. In addition to preventing unintended pregnancies, contraceptive use can also contribute to the reduction of STD risk, which is notorious for overall sexual health.<sup>(10-12)</sup>

The study presented some inherent limitations such as the small sample size and the selection of couples, since these were recruited exclusively from the infertility clinics of the Policlínico Docente Miguel Montesino Rodríguez, so the results may not represent all infertile couples in the territory.



The scientific contribution of this research is considered significant in several aspects since it offers a detailed characterization of the infertile couples attended in the region, which allows a better understanding of the prevalence, risk factors and demographic characteristics associated to this health problem. At the same time, it identified trends and care needs, highlighting the importance of investing in specialized services and prevention programs. It also highlighted the need for a comprehensive approach in the care of infertile couples at the first level of health care in order to effectively assist infertility cases, which contributes to scientific knowledge and improvement of health services.

## CONCLUSIONS

The present investigation suggests that infertility is a multifactorial problem that requires a comprehensive and personalized analysis. The results found in the characterization of the couples highlight the importance of a holistic approach in the diagnosis and treatment of this problem, where the physical, emotional and psychological aspects of each individual are considered. It is essential that couples receive preventive medical care and specific treatments to improve their general health and maximize the chances of conception.

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**Conflict of Interest:**

The authors declare that there is no conflict of interest.

**Author contributions:**

Jim Alex González Consuegra: conceptualization, data curation, formal analysis, project management, research, methodology, resources, supervision, validation, visualization, writing the original draft, drafting, writing, revising and editing.

Miguel Angel Amaró Garrido: data curation, formal analysis, project management, research, methodology, resources, supervision, validation, visualization, writing the original draft, writing, revising and editing.

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[Base de datos empleada en Caracterización de parejas atendidas en consultas de infertilidad](#)

