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ORIGINAL

Incidence of intrauterine growth restriction on Isla de la Juventud

Comportamiento del crecimiento intrauterino retardado en Isla de la Juventud

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ABSTRACT

Introduction: Intrauterine growth restriction (IUGR) is a major global concern, and the problem is more prevalent in developing countries. Cuba is one such country, but thanks to its maternal and child health program, the incidence of IUGR is similar to that in developed countries. Methods: An observational, descriptive, retrospective, cross-sectional study was conducted in the Special Municipality of Isla de la Juventud with all IUGR newborns from the year 2022, with the aim of characterizing the incidence of Intrauterine Growth Restriction on Isla de la Juventud. The sample consisted of 63 newborns with IUGR out of a total of 735 live births. Results: More than 50% of IUGR newborns were born to hypertensive pregnant women; 42.9% of the total were born to mothers between 14 and 26 years of age; and the gestational age with the highest incidence was 39–40 weeks.

Keywords: Intrauterine Growth Restriction; Pregnant Women; Newborns.

RESUMEN

Introducción: El crecimiento intrauterino retardado (CIUR) es una gran preocupación a nivel mundial, cuyo problema es más frecuente en países subdesarrollados. Cuba es uno de estos, pero gracias al programa materno-infantil el comportamiento del CIUR es similar al de países desarrollados. Métodos: En el Municipio Especial Isla de la Juventud se realizó un estudio observacional, descriptivo, retrospectivo de corte transversal con todos los recién nacidos CIUR correspondientes al año 2022, con el objetivo de caracterizar el comportamiento del Crecimiento Intrauterino Retardado en la Isla de la Juventud. La muestra estuvo compuesta por los 63 neonatos con CIUR de un universo de 735 recién nacidos vivos. Resultados: Más del 50 % de recién nacidos CIUR perteneció a gestantes hipertensas, el 42,9 % del total correspondieron a madres entre 14 y 26 años de edad y la edad gestacional de mayor incidencia fue la de 39-40 semanas.

Palabras clave: Crecimiento Intrauterino Retardado; Gestantes; Neonatos.

INTRODUCTION

IUGR is defined by the World Health Organization as the relationship between weight, gestational age, and fetal sex and is the most important predictor of infant mortality, particularly neonatal mortality; the WHO recommends the 10th percentile as the cutoff point beyond which fetuses are considered small for gestational age. (1,2)

Delayed monitoring resulting from poor access to health services—marked by adverse socioeconomic and cultural conditions in some countries, which largely prevent early identification of pregnant women—combined with psychosocial risk factors such as marital status, single mothers, short or long (greater than four years) interpregnancy intervals, since the mother may be considered a primipara, imply risks of miscarriage, neonatal death, low birth weight infants, preterm births, and cesarean deliveries. (3)

The problem of low birth weight at birth remains a global concern, being more prevalent in underdeveloped countries; in Latin America, it accounts for 80% of new-born deaths, and those who survive suffer, on average, from more health issues, such as mental retardation, and are more likely to be malnourished. (4)

The mortality rate during the first year of life is estimated to be 14 times greater in children with IUGR than in those born at term with normal weight. Individuals born with low birth weight typically face multiple subsequent problems, both during the perinatal period, throughout childhood, and even into adulthood. (3) It is estimated that between 15% and 20% of children born worldwide have intrauterine growth restriction at birth, which amounts to more than 20 million new-borns each year, 96% of whom live in developing countries (2), and high rates of morbidity and neurodevelopmental disorders, which have been observed in various follow-up studies through school age and adolescence and even into adulthood. (2-6) The goal for 2025 is to reduce the number of low-birth-weight children by 30%. (5)

The lowest incidence of low birth weight infants (4%) is recorded in Estonia, Lithuania, Finland, Iceland, and Sweden; this low incidence is a clear example of good maternal nutrition. (7)

In Asia, it occurs in 74% of the registered births, whereas in East Asia and the Pacific, it occurs in only 7%. Moreover, in India, which has the largest population, an annual average of 40% is recorded. In other regions, such as Africa, it is present in 79% of births, while in Latin America, it accounts for 8.6%, and in North America, particularly the United States, it accounts for 5.8%. In Chile, the rate is between 3% and 8%, making it one of the Latin American countries with the lowest incidence of low birth weight. (8-10)

Notably, although Cuba is a developing country, its low birth weight rate is similar to—and even lower than— that of developed countries. For example, in 2019, the LBW rate at birth was 5.1%. (6) In a study conducted in 2020 at the “René Ávila Reyes” Polyclinic in Holguín Province, LBW accounted for 46.76%, making it one of the provinces with the highest incidence. (6) A study conducted in Villa Clara Province at the “Mariana Grajales” University Gynecological-Obstetric Hospital reported that 49.4% of newborns with IUGR were diagnosed before delivery. (6)

Over the past three years, in the Special Municipality of Isla de la Juventud, multiple efforts have been made to address this serious problem. In 2020, there were 826 live births, of which 28 were CIUR, representing 3.4%; in 2021, of 748 live births, 31 were CIUR, representing 4.14% of the total; and in 2022, out of 735 live births, 63 were CIUR, thus representing one of the highest incidence rates in the municipality (8.6%). (6)

In response to this situation, health strategies were designed to successfully reverse the health situation to the extent that Cuba is now ranked among the five groups of countries with the lowest indicators in the world. To continue reducing infant mortality, it is necessary to achieve low birth weight rates. (5-7)

Taking into account the situation in the Pinero municipality, the authors of this study posed the following research question: What will be the pattern of intrauterine growth restriction on the Isle of Youth from January to December 2022?

Theoretical Framework:

The most commonly used definition for low-birth-weight fetuses is intrauterine growth restriction (IUGR), whose birth weight falls below the 10th percentile of a preestablished curve relating weight to gestational age.11

It is necessary to make a conceptual distinction between a small-for-gestational-age fetus and true growth restriction, in which an intrinsic or extrinsic pathological process alters the genetic potential for fetal growth. Furthermore, compared with normal growth curves, not all fetuses with intrauterine growth restriction are small for gestational age, since a fetus with the genetic potential to reach a certain weight may fail to do so, even if its weight remains within the normal percentiles; therefore, it is classified as a small-for-gestational-age (SGA) fetus despite having an appropriate weight for its gestational age. IUGR accounts for 3% of all births in Cuba.11

There are two fundamental types of classification: clinical and etiological.

Clinical classification:

Symmetric or Type I.

Asymmetric or type II.

Intermediate or mixed.

Etiological classification:

Intrinsic causes.

Extrinsic causes.

Mixed causes.

Idiopathic causes.

Type I or symmetric IUGR occurs when, during the cellular hyperplasia phase—which takes place in the first 16 weeks of fetal life—damage results in a decrease in the total number of cells. In this type, there is no symmetric growth of the head, abdomen, or long bones11.

During the phase of concomitant hyperplasia and hypertrophy, which occurs between 17 and 32 weeks of gestation, an injury causes intermediate or mixed IUGR; if the injury is early, the IUGR is symmetric because of greater involvement of the hyperplastic component; if the injury is late, the IUGR will be asymmetric because of alterations in the hypertrophic component11.

Etiology

Among the causes of IUGR12-13 are factors that limit fetal growth and those that reduce the fetal supply of nutrients (maternal, fetal, and placental):

• Fetal causes (10%):

- Constitutional delay without pathology (50% maternal genotype; 40% paternal genotype; 5% fetal sex).

- Chromosomal abnormalities, congenital anomalies, or dysmorphic syndromes.

- TORCH infections (toxoplasmosis, rubella, cytomegalovirus, herpes, others).

• Maternal causes (40%):

Chronic infections, anemia, malnutrition, or autoimmune diseases, such as lupus.

Nutritional problems.

• Placental causes (40%):

– Small placenta, placenta previa, fibrosis, or hemorrhages11.

Other causes by trimester

First trimester	Second trimester	Third trimester
Environmental:	Environmental:	Environmental:
X-rays Medications Drug addiction Alcoholism	Maternal nutrition. Socioeconomic factors.	Smoking
Fetal	Placental:	Maternal
Congenital infections. Genetic syndromes. Chromosomal abnormalities. Trisomy 18. Trisomy 13. Triploidy	Multiple infarcts. Partial placental abruption. Circumvallate placenta. Hemangioma.	Vascular disease. Toxemia. Chronic hypertension. Nephropathy. Congenital heart disease. Supine hypotension syndrome. Diabetes mellitus. Anemia. Pregnancy-related conditions.

Diagnosis

The diagnosis of suspected CIR is based on medical history, insufficient weight gain during pregnancy, and the height of the uterine fundus, although this does not apply to multiple pregnancies. The medical history should highlight a history of IUGR: the recurrence of IUGR in subsequent pregnancies is estimated to be 29% for the second pregnancy and 44% if the first two pregnancies are affected14.

Etiological classification and characteristics of CIUR

Aspects	Intrinsic	Extrinsic	Mixed	Idiopathic
Incidence%	25	35–35	5–10	30–75
Gestational age	< 16 weeks	> 24 weeks	16–24 weeks	>24 weeks
Type of CIUR	Symmetric	Asymmetric	Mixed	
Causes	Genetic Infectious Environmental	Placental insufficiency	Medications Malnutrition Smoking	

One study demonstrated an association between elevated alpha-fetoprotein (AFP) levels in amniotic fluid during the second trimester and a subsequent diagnosis of IUGR15.

Since AFP is involved in the transport of polyunsaturated fatty acids, which are essential for fetal development in the intervillous space, an abnormality can result in placental pathology. In contrast, no association has been found for leptin, insulin-like growth factor 1 (IGF-1), or insulin-like growth factor-binding protein 1 (IGFBP-1)16.

The diagnosis is confirmed by fetal biometry and Doppler ultrasound. For fetal measurement, it is important to determine the femur length (FL), abdominal circumference (AC), and head circumference (HC) and to perform a first-trimester ultrasound to determine the gestational age. The HC/AP ratio is very useful for detecting IUGR and for differentiating between different types of IUGR13.

Cases of IUGR should be monitored periodically using biophysical profiles, nonstress testing, Doppler ultrasound of the umbilical artery and middle cerebral artery, and Doppler ultrasound of the uterine artery, although it is unclear how frequently these monitoring sessions should be scheduled in these cases14.

In a study on the management of IUGR (16), no differences in fetal morbidity or mortality were found between patients who were monitored twice a week and those who were monitored every two weeks, except that the first group was 25% more likely to undergo labor induction. Several studies have shown that pulsed Doppler flowmetry is the best predictor of IUGR, particularly type 2, and preeclampsia, which can cause IUGR, as it reveals abnormalities in the uterine and arcuate arteries, as well as in the umbilical vessels, the aorta, and the middle cerebral artery in the fetus. An increase in the pulsatility index of the uterine artery in the second trimester, either alone or in conjunction with a positive notch17 (an early diastolic notch that does not disappear after the 26th week of gestation indicates that flow resistance through the uterine arteries has not decreased), is the best predictor for clinical practice.

Decreased fetal weight has been associated with adaptive cardiovascular changes. Pathology was considered if Doppler ultrasound detected increased resistance in placental flow (in the arcuate and umbilical arteries). A redistribution of blood flow occurs, prioritizing the brain and heart. This manifests as cerebral vasodilation to increase flow, which results in lower resistance in the cerebral arteries. In the heart, adaptations favor the left ventricle12-13.

These changes begin to occur before they are reflected on Doppler ultrasound and may be the cause of heart disease in adulthood. The ultrasound diagnosis should include an assessment of amniotic fluid, as there is a strong association between IUGR and oligohydramnios, and the latter is more severe as placental insufficiency increases13.

Treatment

There is no effective treatment for cases of IUGR confirmed by ultrasound. A watchful waiting approach should be maintained, with periodic monitoring of the fetus. Various treatments have been studied, such as the administration of estrogens, which, by increasing blood flow to the mother, could increase the fetal supply of nutrients; however, no evidence has been found to support this18.

Nor is there evidence regarding the use of beta-mimetics, which could increase nutrient availability by reducing vascular resistance and improving carbohydrate metabolism, although they have known side effects19, or for calcium channel blockers, which would also improve blood flow20.

Likewise, no benefits have been found with respect to plasma expansion, which remains under study on the basis of the assumption that a plasma disorder would reduce maternal–fetal blood flow21.

The use of low-dose acetylsalicylic acid in pregnant women with confirmed uterine artery disease during the first trimester has proven highly effective in preventing prepregnancy, IUGR, and preeclampsia, provided that treatment begins before 16 weeks. This treatment is recommended when a cause originating in uteroplacental microcirculation is suspected, such as autoimmune diseases, preeclampsia, or coagulation disorders22.

Hospital or home bed rest is a widely recommended measure, although it lacks proven scientific evidence23; however, for multiple pregnancies, a slight increase in fetal growth has been suggested, so relative bed rest may be recommended, preferably in the left lateral decubitus position24.

Diet does not appear to have a decisive effect, although a balanced diet is advised, and a high-calorie diet is advised in cases of malnutrition. Some authors argue that balanced protein-energy supplementation appears to induce a slight increase in maternal and fetal weight and a decrease in fetal morbidity and mortality, although high-protein supplements are not justified, as they could be harmful15.

Short- to long-term complications.

Children with IUGR are more susceptible to neonatal and long-term complications, with a mortality rate 3–10 times higher than that of other newborns. These newborns require an assessment at birth by a neonatologist. Extruterine adaptation will be assessed using the Apgar test, and gestational age will be estimated using the Dubowitz and Ballard tests12-25, which are used to evaluate certain physical and neurological characteristics in the newborn to determine gestational age; these tests assess a series of parameters corresponding to a score, the total sum of which indicates gestational age.

The short-term complications of IUGR, particularly type 2, include perinatal asphyxia and adaptive problems. The latter includes meconium aspiration syndrome, with or without persistent pulmonary hypertension or pulmonary hemorrhage (10 times more common), and metabolic abnormalities such as hypoglycemia, hypocalcemia, polycythemia, and hypothermia1. Newborns with IUGR exhibit deficiencies in all nutrients, reduced muscle mass with increased urinary nitrogen excretion, and decreased fat and hepatic glycogen stores, thereby increasing their energy requirements, and they also have increased excretion26.

With regard to micronutrients, the child will have deficient iron and calcium stores; thus, supplementation should be considered. A caloric intake of 130 kcal/kg/day is recommended, with 40–55% of calories coming from fats, with a particular focus on polyunsaturated fatty acids. With respect to childhood morbidity, an increase in neurological disorders and delays in language, visuomotor skills, and social development have been observed. One study revealed an association between psychomotor delay in early infancy and later IQ, regardless of the presence or absence of catch-up growth 26.

In preterm infants, other problems may be associated, such as necrotizing enterocolitis, retinopathy of prematurity, and postnatal growth failure18. Approximately 80% of these children will experience a growth spurt in the first 2 years of life, thereby catching up, whereas the remaining 20% will continue to grow at a slow rate, resulting in a height below their potential height, or even pathologically short stature. Various studies using growth hormone have demonstrated a recovery of 1–2 standard deviations in height with early treatment initiation, approximately age 4, when high doses are used for 2–3 years. Even a Spanish working group on small-for-gestational-age newborns reported benefits when treatment is initiated in children who do not exhibit growth acceleration, without observing side effects27.

Since the late 1980s, many studies led by Barker have demonstrated a strong association between low birth weight and subsequent diseases, such as metabolic syndrome, hypertension, heart disease, obesity, glucose intolerance, type 2 diabetes mellitus, and osteoporosis. This theory, known as the “fetal origin of adult diseases,” appears to be unrelated to other factors, such as age, sex, weight, or physical activity, but rather to rapid development following restricted growth28.

RCIU is characterized by a decrease in fat mass, with a reduction in lipids within adipocytes; however, although the total percentage of fat decreases, visceral adipose tissue increases, and the same occurs with catch-up growth in children with RCIU, in whom a central distribution of fat is observed, even in nonobese children24.

Objective

General:

-To characterize the pattern of intrauterine growth restriction on the Isle of Youth during the period January–December 2022.

Specific:

-To identify IUGR according to maternal age.

- IUGR was identified by skin color.
- IUGR was identified according to maternal conditions.
- IUGR was identified by sex and gestational age.
- Identify the CIUR by region of origin.

METHODS

Design

A cross-sectional, observational, descriptive, retrospective study was conducted in the Special Municipality of Isla de la Juventud for the year 2022, covering the period from January to December.

Population: A total of 735 newborns in the Special Municipality of Isla de la Juventud who were born between January and December 2022 were included.

The inclusion criterion was that all CIUR newborns were in Isla de la Juventud during the study period.

Exclusion criteria: All CIUR newborns for whom, for any reason, all data could not be collected. CIUR newborns whose medical records did not reflect all necessary data or whose records could not be located.

The authors' nonprobabilistic convenience sample consisted of 63 newborns who met the selection criteria and were born during the study period.

Operationalization of the variables

VARIABLE	TYPE	SCALE	DESCRIPTION	INDICATOR
Age group	Quantitative Discrete	14–26 27–36 37–42 43 and older	Age in full years at the time of the study.	Number and Percentage
Skin color	Nominal qualitative Dichotomous	White Black	Based on skin color as described in the medical record	Number and Percentage
Associated maternal conditions	Nominal, polytomous, qualitative	-Hypertension. -Gestational diabetes. - Anemia. -Placental insufficiency. -Other	Based on pathological history described in the medical record.	Number and Percentage
Sex of the newborn	Qualitative and -nominal Dichotomous	Male Female	According to data collected from the birth record and medical history.	Number and Percentage
Gestational Age	Quantitative Continuous	30–34 35–36 37–38 39–40 41 and older.	According to data from the birth records and medical history.	Number and Percentage
Place of origin	Nominal qualitative dichotomous	Rural Urban	According to data from the birth records and medical history.	Number and Percentage

Techniques and Processing

Data Collection: To collect the information, data from the 2022 Birth Registry will be consulted. The medical records of each patient evaluated at the municipal genetic risk clinic during the study period will be reviewed.

Statistical Analysis

To describe the demographic variables of patients with genetic risk, an analysis of the distribution of absolute and relative frequencies will be performed for the qualitative variables "skin color," "associated maternal conditions," "sex of the newborn," and "place of origin" and for the quantitative variables "age group" and "gestational age."

Ethical considerations

Through informed consent, patients will be informed of the purpose of the research, and their approval will be obtained to conduct the study. The study will be presented and explained by the project leader to the participants, emphasizing safety measures in sample collection, as well as the level of privacy and confidentiality of the information obtained. (Appendix 2)

RESULTS

Over the 12-month study period, there were a total of 735 births in the Isla de la Juventud Special Municipality, with 63 CIUR newborns, representing 8.6%, thus showing a 4% increase in the past year.

Table No. 1: Distribution of CIUR at birth by maternal age in Isla de la Juventud from January to December 2022.

Maternal Age	Newborns with CIUR	Percentage
14–26	27	42.9%
27–36	21	33.3%
37–42	15	23.8%
Total	63	100%

Source: Newborn medical records and the 2022 birth registry.

The distribution of the prevalence of IUGR at birth by maternal age group is shown in Table 1. Among women aged 14 to 26, 27 newborns had intrauterine growth restriction, accounting for 42.9% of all newborns, followed by those aged 27 to 36, with a total of 21, accounting for 33.3%. These figures are consistent with research conducted by Ana Batista and colleagues in Holguín Province.

An analysis of various risk factors revealed that at the time of conception, 50.8% of pregnant women with hypertension had newborns with IUGR, followed by 17.5% of pregnant women with diabetes. Additionally, among pregnant women with placental insufficiency, anemia, and other associated conditions, 20 newborns had IUGR, representing 31.74% of all IUGR cases in the municipality.

Analysis of Figure 1 revealed that the predominant skin color was black, with 35 cases of IUGR out of the total, accounting for 55.6%, which is consistent with research conducted by Dr. Juan Vázquez.

Table No. 2: Distribution of low birth weight according to associated maternal conditions. Isla de la Juventud, January–December 2022.

Maternal conditions	LBW at birth	Percentage represented
High blood pressure	32	50.8%
Diabetes mellitus	11	17.5%
Placental insufficiency	7	11%
Anemia	3	4.8%
Other	10	15.9%
Total CIUR	63	100%

Source: Maternal medical records.

Table 3. Shows the results of the analysis of intrauterine growth restriction by sex.

Sex	Percentage of Total IUGR Cases	Percentage of total IUGR
Female	32	50.8%
Male	31	49.2%
Total CIUR	63	100%

Source: Birth Registry 2022

The distribution of CIUR by sex of the newborns is shown in Table 3, which reveals that females predominated, accounting for 50.8% of the population. These data align with the most recent 2021 study by Dr. Annisleidis Cutiño, a neonatologist.

Table 4. Shows the distribution of CIUR cases by gestational age at the time of delivery for CIUR newborns during the period from January to December 2022.

Gestational Age	Number of CIURs by gestational age	Percentage of total CIUR
30–34	2	3.2%
35–36	8	12.7%
37–38	24	38.0%
39–40	27	42.9%
41 and older	2	3.2%
Total CIUR	63	100%

Source: Maternal medical records and delivery records.

The distribution of intrauterine growth restriction by place of origin is shown in Table 5, with mothers from rural areas being predominant and 35 newborns accounting for 56% of all newborns with IUGR.

Place of origin	Percentage of total IUGR cases	Percentage of the total
Rural	35	56%
Urban	28	44%
Total CIUR	63	100%

DISCUSSION

Various factors can influence intrauterine development and affect fetal growth, which may be associated with prematurity. In the study sample, most pregnant women who gave birth to infants with IUGR at birth had preterm delivery.

A study conducted at the Héroes del Baire Hospital in the Special Municipality of Isla de la Juventud revealed that of the 735 live births, 63 had IUGR.

Adequate maternal nutrition corresponds to proper maternal weight gain, which is extremely critical for the intrinsic development of the fetus. Inadequate nutrition is a primary cause of intrauterine growth restriction; therefore, strict monitoring of the nutritional status of pregnant woman is necessary throughout her pregnancy, even if it is assessed at every prenatal visit.

Intrauterine growth restriction and prematurity are closely related conditions. During the intrauterine period, the fetus must meet certain characteristics corresponding to its gestational age, which serve as predictors of the organic and functional maturation that the developing individual is undergoing. These can be assessed through both clinical, obstetric and echocardiographic estimates4-5.

López-González29 provides a detailed analysis of other factors. His results present a classification into two groups: maternal and fetal. Maternal factors included personal medical history, genetic-obstetric history, age, chronic noncommunicable diseases, toxic habits, body mass index, and pregnancy-related diseases, whereas fetal factors included twinning, malformations, and genetic makeup.

These data are corroborated compared with those of the study by Zorrilla-Quiñones et al.30 in Pinar del Río, which identified gestational age, prematurity, and maternal age as the most significant factors.

In their study conducted in Ecuador, Freiré-Carrera31 reported that inadequate maternal weight gain during pregnancy was among the most significant factors. If we compare these results with those of López-González29, a clear correlation between them is evident.

Based on the study conducted by the authors of this paper, the prevalence of hypertension among these pregnant women can be observed to affect more than 50% of them.

These pregnant women developed hypertension after 20 weeks of gestation. Gestational hypertension is considered a global and priority maternal health issue. Hypertension typically presents suddenly and progresses rapidly toward multiple organ involvement 32.

Zorrilla-Quiñones et al.30 and Freiré-Carrera et al.31 highlighted hypertensive disorders of pregnancy as key factors. This allows us to conclude that there is a close relationship between this condition and its role in causing low birth weight.

Care and attention to pregnant women diagnosed with IUGR in the municipality have made it possible to extend the delivery date to 37 weeks of gestation, thereby improving the quality of life for newborns with IUGR.

CONCLUSIONS

The analysis conducted by the authors of the study revealed the following:

-Mothers in the 14–26 age group accounted for the greatest number of cases of IUGR during the study period.

-Given the associated maternal conditions, the highest percentage was observed among those who had hypertension.

In terms of maternal skin color, black women were more prevalent than white women were.

-The incidence of preterm birth by sex was higher among females.

-The gestational age with the highest incidence rate of IUGR ranged from 39–40 weeks.

-The maternal area of origin with the highest incidence of CIUR newborns was rural.

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APPENDICES

Appendix 1

The following graph shows an analysis of the pattern of intrauterine growth restriction by polyclinics, with Polyclinic No. II standing out with an incidence rate of 36 newborns with IUGR, followed by Polyclinics III and I.

Appendix 2

Informed Consent

I, _____

Hereby state that I voluntarily consent to participate in the research on the incidence of IUGR after having clearly understood the objectives of this study.

I declare that I have had the opportunity to clarify all my doubts regarding this research; furthermore, I have been informed of the characteristics of the study, that it poses no danger to my physical or emotional health and that I may withdraw at any time I wish, as participation is entirely voluntary.

Having been made aware of these details, I give my consent to participate in the study.

In witness whereof, I sign this document in the Special Municipality of Isla de la Juventud, on the _____ day of the month of _____, in the year 2023.

Participant's signature ----------

Appendix 3

Table No. 6 corresponding to Figure 1

Skin color	Percentage of the total CIUR	Percentage of total CIUR
White	28	44.4%
Black	35	55.6%
Total	63	8.6%