*Original Article*

# Observational Quantitative Study of Factors Associated with Noncompliance in Growth and Development Monitoring in Children Aged 0 to 1 Years at the Laura Rodríguez Dulanto Duskil Maternal-Infant Center, Comas, Lima, Peru, 2023

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*Abstract - Given the constant dangers to the health of the child, it is proposed to identify the factors associated with noncompliance with CRED control in children from 0 to 1 years of age at the Laura Rodríguez Dulanto Duskil Maternal and Child Center, Comas 2023. Methodologically, the study has a quantitative approach and a descriptive-cross-sectional design with 169 mothers of children aged 0-1 years; the study was carried out in June 2023, the technique used was the survey, and the instrument was the Penao questionnaire. As a result, it was found that the factors that influence CRED noncompliance are: The mother's work schedule is at the Socioeconomic level. 73.45%, followed by household chores at -66.9%. Cultural ignorance of the frequency of CRED controls 59.2%, with 57.4% of mothers downplaying the importance of controls. Institutional Waiting time at 72.8%, opening hours at 72.2%, treatment of the admission service at 62.7%, and the time used for control is not adequate at 58.6%. It is concluded that there are socioeconomic, cultural, and institutional factors that prevent noncompliance with CRED control and noncompliance.*

*Keywords - Associated factors, Noncompliance, Growth and development.*

## 1. Introduction

The World Health Organization (WHO) in 2020 mentioned that noncompliance with Growth and Development Control (CRED) in infants causes 5.2 million deaths each year worldwide. Likewise, these figures may increase mortality due to the COVID-19 pandemic [1]. Similarly, the Spanish Association of Pediatrics (AEP) in 2021 reports that the impact of the pandemic has been felt in the child population, hindering attendance at CRED checks, and leading to delays in systematic vaccination, proper development, and growth. The psychosocially affected population has been particularly punished due to confinement [2]. On the other hand, the United Nations International Children's Emergency Fund (UNICEF) in 2019 states that there is a significant problem in child health worldwide, with 15,000 children under 5 dying every day from various preventable causes, such as adequate monitoring in the early years of life [3]. Another report by the same organization in 2019 indicates that globally, almost 2 out of 3 children between six months and two years old do not receive food that promotes rapid growth of their bodies and brains, affecting their physical and cerebral health, leading to the death of the child in many cases [4]. Also, in a study conducted in China in 2021 on the growth and development of children aged 0 to 6, the highest incidence found was a significant increase in obesity, reaching 8.78% and 10.12%.

It has become a serious public health problem in China in recent years [5]. According to the Pan American Health Organization (PAHO), in 2020, the Region of the Americas and the Caribbean, one in ten deaths in children under 5 is due to congenital defects, followed by influenza, pneumonia, and injuries as the main causes of infant mortality [6]. At the same time, a study conducted in Ceará, Brazil, in 2021 estimates that more than 250 million children in low- and middle-income countries do not reach their full potential development due to low birth weight. Hence, the importance of growth and development control in the first 1000 days of life, due to the rapid development of the brain, ensuring academic achievements and optimal results later in life [7]. On the other hand, in a study conducted in Ecuador in 2019, it was identified that around 56% of the infant population between 0 and 2 years old does not receive comprehensive child development care, neither in the private nor public sector [8]. The Demographic and Family Health Survey (ENDES 2019) mentions that in Peru, 15 out of a thousand children under 5 years old died from various causes related to infectious diseases, which could have been prevented with the application of vaccines. The reality is that 20.8% of children did not attend the CRED office [9]. Likewise, in a study conducted in Lima in 2019, it was identified that 55.6% did not comply with the growth and development checks of their

children under 2 years old [10]. Therefore, the Ministry of Health, through its Technical Standard No. 137 of 2017, informs that growth and development control is a health intervention that has as its fundamental purpose to monitor the adequate growth and development of the child. This is carried out by Nursing personnel who play an important role in timely diagnosis and preventing risks, deficiencies, and disabilities in children from 0 to 5 years old [11]. Therefore, when a child is born, health facilities give the mother a Growth and Development Control format called CRED Control, which evaluates how the child develops at this stage [12]. However, the reality of childhood is different since, in 2020, only 9.5% of the population under 36 months accessed Growth and Development Control. This resulted in 40.0% of children aged 6 to 35 months having anemia, only 68.45% of the population under 6 months receiving exclusive breastfeeding, and 61.1% of children under 12 months completing their vaccines according to their age [13]. Hence, the relevance of early development care, as it is aimed at enhancing the capacities and conditions of the environment where the girl and boy interact from birth to 5 years old through counseling to parents or caregivers to facilitate their better growth and development [11]. Currently, infant mortality is increasing every day worldwide due to noncompliance with CRED, where socioeconomic, institutional, and cultural factors negatively impact the physical and cognitive development of children. Therefore, the importance of this research, as the first years of a child's life are of great significance for brain development, psychomotor development, and especially for the increase in human capital. In this way, the commitment of Nursing is to generate quality care and provide adequate monitoring of the growth and development of children, with the aim of improving comprehensive growth and development through early detection of risks, alterations, or disorders for their timely care, which will help reduce deficiencies, disabilities, and mortality that are causing suffering to many households worldwide. Noncompliance with the growth and development control (CRED) results from barriers such as the lack of frequent participation in health services and non-adherence to nursing instructions on appointments for minors. Social, cultural, economic, and institutional factors are closely associated with this noncompliance, generating risks to child health, such as diseases, inadequate growth, affected cognitive development, malnutrition, and anemia. This problem, with serious consequences, requires attention, especially in Peru and the world. Regarding the justification of this study, it allows mothers to understand the importance of complying with the growth and development control of minors. Likewise, it helps to promote health promotion and prevention, to avoid risks or complications that may arise in minors. Also, the results found will help determine the relationship between the factors and compliance with growth and development control, whose results will help mothers raise awareness of the importance of the periodicity of checks for a healthy child and promote preventive actions by the nursing professional, such as commitment, control, and responsibility in the area of growth and development. The findings of this study are systematically organized into four distinct sections: the statement of the problem, the theoretical framework, the research methodology, and the results. Each section meticulously outlines the study's process, from initial problem identification through to conclusive insights. Included within these sections are tables that elucidate the data, a comprehensive discussion that interprets the findings, and a conclusion that encapsulates the study's outcomes. Furthermore, recommendations are proposed, aiming to enrich the academic discourse. The study endeavors to contribute significantly to the existing body of knowledge, offering viable solutions to enhance the physical and cognitive growth and development of children under the age of one year, thereby supporting their overall well-being.

## 2. State of the Art

As part of the research development, related works that evaluate child control during their breastfeeding period are presented. In [14], in Lima, factors related to social, cultural, and institutional aspects influencing the irregularity of growth and development checks for children under 1 year at the Peru Korea Bellavista Callao Health Center in 2019 were determined. It was a quantitative, applicative-level study with a population of 107 mothers of children under one year who did not attend at least one CRED check. The results showed that 76% of interviewed mothers mentioned that caring for their young children prevented them from regularly attending CRED checks due to social factors. Regarding institutional factors, 71% stated that nursing professionals were insufficient, and 67% mentioned that waiting time was a factor preventing them from attending CRED checks.

Similarly, Callao [15] they aimed to determine the factors influencing noncompliance with growth and development control (CRED) for children under 3 years at the Alta Mar Health Center. It was a quantitative trend study with descriptive analysis. The sample consisted of 148 mothers with children under 3 years old. It was found that 33% of mothers work, and their schedules make it difficult to attend CRED checks; 53% are unaware of the frequency of the checks, 80% do not attend due to the duration of the waiting time for the check, and 56% mention that it is due to the treatment of the admission service.

In [16], they determined the factors of noncompliance with CRED checks for children under 1 year. It was a descriptive, cross-sectional study with a study population of 25 mothers of children under one year. It was evidenced that noncompliance factors were: Socioeconomic factors - Mother's work schedule 56.0% and household chores 60.0%; cultural factors - Lack of knowledge about the frequency of checks 76.0% and child's health conditions 56.0%; institutional factors - Partial service hours 68.0%, nurse's excessive time use 60.0%, waiting time for care 76.0%, lack of clarity in information 68.0%. Sociocultural factors significantly influence the health of a child. In the study [17], the focus was on examining the link between these sociocultural determinants and the lack of participation in growth and development evaluations within the Alto Quiel community in Boquete throughout 2019.

This investigation employed a non-experimental, cross-sectional research design, engaging a sample of 25 mothers with children under the age of five. The findings highlighted a strong correlation between various social and cultural aspects of families and the missed appointments for growth assessments. Key factors identified include the age of the mother, her level of education, frequent changes in residence, and ethnic background, among others, underscoring the complex interplay between sociocultural dynamics and child health monitoring practices.

Also, in [5], they propose to explore the growth and development status of children aged 0 to 6 in the Jiangsu province and the influence of family factors on the growth and development of children. A random sampling, cross-sectional study was conducted on a population of 2,004 families with children aged 0 to 6, revealing critical insights into the physical development of young children. The study found that the prevalence of stunting in boys and girls within this age group was 1.45% and 1.78%, respectively. Rates of being underweight were lower, at 0.54% for boys and 0.67% for girls. The majority of children, 89.86% of boys and 87.88% of girls fell within normal ranges when assessed by Weight-for-Height Z-scores (WHZ), indicating healthy growth patterns. However, wasting was observed in 1.36% of boys and 2.00% of girls, while obesity rates stood at 8.78% for boys and 10.12% for girls, highlighting areas of concern. Multivariate logistic regression analysis further identified that higher annual family income and elevated levels of caregivers' nutritional knowledge positively impacted children's growth and development, with statistical significance ($P < 0.05$), underscoring the importance of socioeconomic factors and informed caregiving in promoting child health.

In Brazil, a study [7] investigated the impact of pregnancy and neonatal factors on child development scores through a population-based cross-sectional approach involving 3,566 children from 3,200 households. The findings revealed that children born to mothers who did not take folic acid supplements during pregnancy scored lower in fine motor skills and problem-solving abilities (PAG values <0.05). Additionally, neonatal factors such as low birth weight (LBW) were significantly linked to decreased scores in several developmental domains: communication scores were 0.14 standard deviations (SD) lower, fine motor scores were 0.24 SD lower, and problem-solving scores were 0.31 SD lower compared to children with normal birth weight, all with statistical significance (PAG values <0.05). The study also highlighted the importance of postnatal care practices.

Newborns who required resuscitation at birth, antibiotic treatment for infections, or prolonged hospital stays exhibited lower scores in certain developmental areas. Moreover, delaying the initiation of breastfeeding beyond the first hour after birth was associated with reduced performance in gross motor and social-personal development domains (PAG values <0.05). These findings emphasize the critical role of prenatal care, birth conditions, and early postnatal interventions in influencing children's developmental outcomes.

# 3. Setting and Conceptual Basis

This research is based on Nola Pender's Health Promotion Theory, widely used by nursing professionals to analyze health-related behaviors and guide individuals, families, and communities toward healthy habits [18]. The theory emphasizes the importance of self-care, even when mothers do not comply with child checks. In this context, the nurse takes on a leadership role in preventive and educational activities to address the reasons and factors leading to noncompliance with growth and development checks. The relevance of this theory is reflected in our investigation into the factors associated with noncompliance with CRED checks in children aged 0 to 1 at the Laura Rodríguez Dulanto Duskil Maternal and Child Center in Comas 2023, Children aged 0 to 1: It is a stage where the infant is entirely dependent, and their form of expression is crying. Subsequently, it gradually transforms into an autonomous, independent being with participation, opinion, and independent thought. They actively engage with their environment through sight, stretching, and exploring everything around them. This stage is crucial in brain development, involving the development of millions of cells called neurons and the connections between them, thus developing their full physical, cognitive, and social potential [19]. The family, as the fundamental unit, must promote healthy parenting practices. Early childhood, from 0 to 8 years, is crucial for brain development. Development is a dynamic process encompassing biological, psychological, and cognitive aspects, among others. Growth, an increase in body mass, is influenced by various factors. Assessment involves collecting and recording data through techniques such as observation and interviews. Diagnosis, based on data analysis, identifies real or potential problems. The intervention aims to modify risk factors.

**Table 1. Classification of CRED Controls In Children Aged 0-1 Years**

| Age | Concentration | Periodicity | Number of controls identified |
|---|---|---|---|
| Newborn | 4 | 48 hours after discharge | |
| | | 7, 14 and 21 days | |
| | | TOTAL | 4 |
| Under 1 year old | 11 | 1 month | |
| | | 2 months | |
| | | 3 months | |
| | | 4 months | |
| | | 5 months | |
| | | 6 months | |
| | | 7 months | |
| | | 8 months | |
| | | 9 months | |
| | | 10 months | |
| | | 11 months | |
| | | TOTAL | 15 |

**Table 2. Variable operationalization**

| OPERATIONALIZATION OF THE VARIABLE | | | |
|---|---|---|---|
| **Title: Factors associated with noncompliance with CRED control in children from 0 to 1 years of age at the Laura Rodríguez Dulanto Duskil Maternal and Child Center, Comas 2023** | | | |
| **Variable** | Noncompliance factors: Control of growth and development (CRED). | | |
| **Variable type** | Type of variable according to its nature: Qualitative and ordinal | | |
| **Conceptual definition** | CRED noncompliance factors are defined as causes or barriers that frequently cause failure to provide health care, which leads to an "accidental" or "intentional" failure, in which the mother does not comply with the indications received by the nurse regarding the frequency of the child's checkups on indicated dates. | | |
| **Operational definition** | The motives, reasons, and circumstances of the mothers associated with the noncompliance with CRED control in children from 0 to 1 years of age at the Laura Rodríguez Dulanto Duskil Maternal and Child Center, Comas 2023, which will be measured with the questionnaire Factors associated with CRED noncompliance. | | |
| **Dimensions** | Socioeconomic factors | Cultural factors | Institutional factors |
| **Indicators** | 1,3,4, and 6 | 2 and 5 | 7,8,9,10,11,12,13,14,15 and 16 |
| **N° of items** | 4 items | 2 items | 10 items |
| **Final value** | The higher the score in each dimension, the higher the level of factors associated with CRED noncompliance. | | |
| **Criteria for assigning values** | Having corresponding values<br>Yes = 1 point<br>No = 0 points. | | |

Monitoring, recorded in the medical history, facilitates continuous evaluations. Growth and Development Control (CRED) seeks to identify risks and motivate active family participation, with access being a right and duty of parents [11].

### 3.1. Definition of Terms
#### 3.1.1. Associated Factors
The associated factors are those social, cultural, economic, sociodemographic, and institutional variables such as household chores, work schedules, and having 2 or more 3 children, which are closely related to the non-compliance of minors and can have significant consequences on their health [20].

#### 3.1.2. CRED Noncompliance Factors
These are the causes or barriers that frequently lead to failure to attend health services, resulting in "accidental" or "intentional" failure, where the mother does not comply with the instructions received from the nurse regarding the frequency of child checkups on specified dates. These factors cause a series of problems and health risks to the well-being of children, such as prevalent diseases, inadequate physical growth, malnutrition, anemia, physical development, and cognitive and intellectual capacity, among other consequences, which are aggravated by delayed healthcare for the child [9].

## 4. Methodology and Results
It is non-experimental as it deals with variables without intervention and analyzes them in their natural environment.

It is cross-sectional in that the variable was measured at a specific moment and place [21].

### 4.1. Temporal and Spatial Scope
The study was conducted at the Laura Rodríguez Dulanto Duskil Maternal and Child Center in the district of Comas, province of Lima, department of Lima, located at 30th Street No. 150, Urb. The Comas Pine Forest. It belongs to the DISA Northern Lima Health Directorate, classified as a level I-4 health facility by the MINSA. It operates 24 hours a day and provides services such as general medicine, nursing and immunizations, dentistry, clinical laboratory, obstetrics, tuberculosis service, pharmacy, emergency service, childbirth care, hospitalization, social service, psychology, nutrition, and Comprehensive Health Insurance (SIS).Its construction, which cost $2,500,000, was completed on July 7, 2013, under the supervision of Carlos Mansilla Herrera, Deputy Director of the Health Directorate V Lima City (DISA V LC), and Simón Ccoyllo Sánchez, Executive Director of the Túpac Amaru Health Network, along with a delegation of experts from the Korea International Cooperation Agency –KOICA – Peru, including Song Chang-Hoon. The facility can serve approximately 26,220 people in the Comas district.

### 4.2. Type of Research
The present study has a quantitative approach and a descriptive-cross-sectional design. It is non-experimental because it addresses variables without intervention and analyzes them in their natural environment. It is cross-sectional in the sense that the variable was measured at a specific time and place [21].

### 4.3. Level of Research

The research is at a descriptive level; the study of the factors associated with CRED noncompliance are causes or barriers that frequently cause the failure of parents or caregivers to attend the health service. This research has been carried out in different studies [9].

### 4.4. Population, Sample and Sampling

The population consisted of 301 mothers with children under 1 year of age who attended the CRED control of the Laura Rodríguez Dulanto Duskil Maternal and Child Center, Comas 2023. Based on the EPIDAT 4.2 statistical program, the calculation of the sample to be surveyed was carried out with a confidence level of 95% and a margin of error of 5%. The sample of 108 mothers to be surveyed was selected according to the inclusion and exclusion criteria shown below.

Sample and Sampling: The sample was 169 mothers with children under 1 year of age from the Laura Rodríguez Dulanto Duskil Maternal and Child Center, Comas 2023, who met the Inclusion Criteria:

- The mother or guardian of the infant who attends the CRED control (child must be between 0 and 1 years old)
- The mother or guardian of the minor must sign the informed consent provided.

In addition to the exclusion criteria:

- All mothers with children who do not wish to participate will be excluded.

- Mothers who have had a mental health problem, therefore, are not primary caregivers.
- Mothers who are not cared for at the Laura Rodríguez Dulanto Duskil Comas Maternal and Child Center.
- Children over one year of age.

### 4.5. Instrument and Technique for Data Collection

As for the instrument, it was the questionnaire, which was validated and created by Marita Rossanet Penao Chauca in 2013; the validity of the constructor and content of the instrument was carried out through the binomial test of expert judgment, in which 8 health professionals participated, with the result of the binomial coefficient: p=0.013285. They were then subjected to Kuder Richardson's reliability test, obtaining KR=0.865. It consists of 16 dichotomous questions in total. Statements 1, 3, 4, and 6 correspond to socioeconomic factors; statements 2 and 5 correspond to cultural factors; and statements 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16 correspond to institutional factors, where you answer (YES) when you agree with the statement and (NO) when you don't. Data collection will be carried out in April, where mothers with children who presented noncompliance with CRED control will be surveyed [15]. The methodology selected for data collection in this study will be the administration of surveys. The survey is a widely used technique as a research procedure, as it allows data to be obtained and processed quickly and efficiently by collecting and analyzing a series of data from a sample of cases representative of a wider population or universe [22].

**Table 3. Instrument**

| S. No | STATEMENTS | YES | NO |
|---|---|---|---|
| 1 | Does your child's work schedule make it difficult for him or her to check up on his or her growth and development? | | |
| 2 | Do you think growth and development controls are important? | | |
| 3 | Do your household chores make it hard for you to get your child in for his or her growth and development checkup? | | |
| 4 | Caring for your other minor children. Do you have a hard time getting your child in for his or her growth and development checkup? | | |
| 5 | Do you know how often you should take your child for growth and development checkups? | | |
| 6 | Does the expense you make to take your child to growth and development checkups seem high to you? | | |
| 7 | Is office hours the reason you don't take your child for checkups? | | |
| 8 | Is the time the nurse uses to check on your child adequate? | | |
| 9 | Is waiting time a reason you don't take your child to a growth and development checkup? | | |
| 10 | Is the nurse's treatment a reason you don't take your child for growth and development checkups? | | |
| 11 | Is the inpatient treatment when you go to the health center the reason you don't take your child for a checkup? | | |
| 12 | Is the distance between your home and the health center a reason why you don't take your child for checkups? | | |
| 13 | Do you think the information provided by the nurse is unclear? | | |
| 14 | Do you think the information provided by the nurse is not helpful? | | |
| 15 | Do you think that the number of nursing professionals who attend the growth and development service is sufficient? | | |
| 16 | Is the nurse present at her scheduled time? | | |

### 4.6. Results

**Table 4. Sociodemographic characteristics of mothers of children under one year of age. CMI Laura Rodríguez Dulanto Duskil, Comas June – 2023.**

| Sociodemographic characteristics | n=169 | |
| --- | --- | --- |
| | **fi** | **%** |
| **Sex of the child** | | |
| Male | 75 | 44,4 |
| Female | 94 | 55,6 |
| **Health Service** | | |
| Comprehensive Health Insurance (SIS) | 160 | 94,7 |
| Social Health Insurance (EsSalud) | 3 | 1,8 |
| Private or Private | 2 | 1,2 |
| None | 4 | 2,4 |
| **Gender of mother or caregiver** | | |
| Male | 0 | 0,0 |
| Female | 169 | 100,0 |
| **Age of the mother or caregiver** | | |
| Less than or equal to 18 years of age | 27 | 16,0 |
| From 19 years old to 25 years old | 55 | 32,5 |
| From 26 years old to 35 years old | 50 | 29,6 |
| From 36 years to 45 years old | 24 | 14,2 |
| Ages 46 and over | 13 | 7,7 |
| **Marital status** | | |
| Single | 20 | 11,8 |
| Married woman | 33 | 19,5 |
| Cohabitant | 107 | 63,3 |
| Widow | 9 | 5,3 |
| **Degree of education** | | |
| None | 8 | 4,7 |
| Primary | 46 | 27,2 |
| High school | 73 | 43,2 |
| Superior | 42 | 24,9 |
| **Occupation** | | |
| Housewife | 57 | 33,7 |
| Independent | 53 | 31,4 |
| Employee | 35 | 20,7 |
| Professional | 24 | 14,2 |
| **Number of children under the age of 5** | | |
| 1 child | 58 | 34,3 |
| 2 children | 73 | 43,2 |
| More than 2 children | 38 | 22,5 |
| **Household Income** | | |
| Income less than S/. 1,025 | 116 | 68,6 |
| Between S/. 1,025 to 2,050 | 46 | 27,2 |
| More than S/. 2,050 | 7 | 4,1 |
| **Knowledge that CRED helps prevent children's risks and growth and developmental disorders** | | |
| No | 111 | 65,7 |
| Yes | 58 | 34,3 |

### 4.7. Data Analysis Techniques and Processing

The data collected from the sample in this research were entered into the SPSS statistical software and then proceeded to perform an exploratory analysis of the data to prepare it for what would later come to do the data analysis. The statistical techniques used are mainly descriptive statistics, summarized in absolute frequencies and relative frequencies. Regarding the inferential analysis, the association of the sociodemographic variables and the factors associated with the noncompliance with the CRED control was tested; given that the variables in question are nominal or qualitative variables, the Chi-square test was used in order to determine

the existence or not of independence of two variables. This leads us to infer a correlation between the variables under investigation. Table 4 presents a detailed demographic and socioeconomic breakdown of the study population, focusing on the characteristics of the children, their mothers or caregivers, and their families. In terms of the children's gender distribution, 55.6% (94) were identified as female, and 44.4% (75) as male. When examining health service affiliation, a significant majority, 94.7% (160), were enrolled in the SIS health program, while minimal percentages were either unaffiliated (2.4%), covered by EsSalud (1.8%), or subscribed to private health insurance (1.2%). All surveyed mothers or caregivers (100%, 169 individuals) were female. Age-wise, the largest group of mothers, 62.0% (105), fell within the 19 to 35 age range, followed by 16.0% (27) aged 18 or younger, 14.2% (24) between 36 and 45, and 7.7% (13) older than 46 years. Marital status revealed that 63.3% (107) were cohabiting, 19.5% (33) were married, 11.8% (20) identified as single, and 5.3% (9) were widowed. Regarding educational attainment, secondary education was the most common level completed (43.2%, 73), with primary education (27.2%, 46), higher education (24.9%, 42), and no education (4.7%, 8) following. Occupation-wise, 33.7% (57) were housewives, 31.4% (53) self-employed, 20.7% (35) employed, and 14.2% (24) professionals. The distribution of families by the number of children under five showed that 43.2% (73) have two children, 34.3% (58) have one child, and 22.5% (38) have more than two children. Family income levels varied, with 68.6% (116) earning less than S/.1025, 27.2% (46) earning between S/.1025 to S/.2050, and 4.1% (7) earning more than S/.2050. Lastly, regarding maternal awareness of CRED's role in preventing growth and development risks and disorders in children, 68.6% (116) reported not having this knowledge. Table 5 shows the socioeconomic factors that hinder compliance with the growth and development controls of children under 1 year of age at the Laura Rodríguez Dulanto Duskil Maternal and Child Center in the district of Comas are presented. Of these, the greatest difficulty occurs with work schedules, where it occurs in 73.4% (124) of the participants, followed by household chores in 66.9% (113) of the cases, care of other minor children in 60.9% (103) of the participants

and, to a lesser extent, expenses to take the child to the CRED control occurring in 31.4% (53) of mothers. Table 6 shows the cultural factors that prevent the control of growth and development in children under 1 year of age at the Laura Rodríguez Dulanto Duskil Maternal and Child Center are presented. From the data collected, it is observed that a significant portion, 59.2 (100) of respondents, are unaware of the recommended frequency for their child's growth and development checkups. Additionally, 57.4% (97) of the mothers involved in the study underestimated the significance of CRED (growth and development) controls, indicating a notable gap in awareness and understanding of child health monitoring practices. Table 7 projects the institutional factors that make it difficult to fully comply with the growth and development controls of children under 1 year of age. Of these, it was found that 72.8% (123) stated that the greatest difficulty occurred in the waiting time to carry out this control, 72.2% (122) indicated that the hours of attention were the reason why they did not take their child to the health center, 62.7% (106) stated that it was the treatment of the admission service. 48.5% (82) mentioned that the nurse was not present at her indicated time, 43.8% (74) considered that the information provided by the nurse was not useful, 42.0% (71) indicated that the time used by the nurse to check on their child was adequate, 41.4% (70) considered that the information provided by the nurse was not clear. 33.1% (56) believe that the number of nursing professionals they attend is not enough, 31.4% (53) consider that the distance between their home and the health center is a reason why they do not take their child for their checkups and 27.2% (46) state that the nurse's treatment is a reason for not taking their child for checkups. Table 8 presents the association between socioeconomic factors and the sociodemographic data of the participants; the p value is less than 0.05 in the variables: level of education, occupation, number of children under 5 years of age, family income and knowledge that CRED helps prevent risks and growth and development disorders in children; Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, in which it is shown that there is an association of the aforementioned variables with the socioeconomic factor of our study.

**Table 5. Socioeconomic factors according to noncompliance with CRED control**

| Socioeconomic factors | Present | | Absent | | Total | |
|---|---|---|---|---|---|---|
| | fi | % | fi | % | fi | % |
| Working Hours | 124 | 73,4 | 45 | 26,6 | 169 | 100 |
| Household chores | 113 | 66,9 | 56 | 33,1 | 169 | 100 |
| Caring for other minor children | 103 | 60,9 | 66 | 39,1 | 169 | 100 |
| Expense to take your child to CRED checkups | 53 | 31,4 | 116 | 68,6 | 169 | 100 |

**Table 6. Cultural factors according to noncompliance with CRED control**

| Cultural factors | Present | | Absent | | Total | |
|---|---|---|---|---|---|---|
| | fi | % | fi | % | fi | % |
| Knowledge of the importance of CRED controls | 69 | 40,8 | 100 | 59,2 | 169 | 100 |
| Knowledge of the frequency of CRED checks | 72 | 42,6 | 97 | 57,4 | 169 | 100 |

**Table 7. Institutional factors according to noncompliance with CRED control**

| Institutional Factors | Present | | Absent | | Total | |
|---|---|---|---|---|---|---|
| | fi | % | fi | % | fi | % |
| Waiting time is the reason not to take control of CRED. | 123 | 72,8 | 46 | 27,2 | 169 | 100 |
| Hours of operation. | 122 | 72,2 | 47 | 27,8 | 169 | 100 |
| Dealing with the intake service is a reason not to take control of CRED. | 106 | 62,7 | 63 | 37,3 | 169 | 100 |
| Presence of the nurse at her indicated time. | 87 | 51,5 | 82 | 48,5 | 169 | 100 |
| The information provided by the nurse is not helpful. | 74 | 43,8 | 95 | 56,2 | 169 | 100 |
| The time used for CRED control is adequate. | 71 | 42,0 | 98 | 58,0 | 169 | 100 |
| The information provided by the nurse is unclear. | 70 | 41,4 | 99 | 58,6 | 169 | 100 |
| Insufficient nursing professionals. | 56 | 33,1 | 113 | 66,9 | 169 | 100 |
| Distance between your home and the health center. | 53 | 31,4 | 116 | 68,6 | 169 | 100 |
| The nurse's treatment is a reason not to take CRED under control. | 46 | 27,2 | 123 | 72,8 | 169 | 100 |

**Table 8. Association between socioeconomic factors and sociodemographic data**

| Sociodemographic Variables | Socioeconomic factors | |
|---|---|---|
| | Value | p_valor (Sig.) |
| Sex of the child | 0,32 | 0,64 |
| Health Service | 5,35 | 0,15 |
| Age of the mother or caregiver | 9,22 | 0,06 |
| Marital status | 1,77 | 0,62 |
| Degree of education | 17,61 | 0,00* |
| Occupation | 10,06 | 0,02* |
| Number of children under the age of 5 | 32,67 | 0,00* |
| Household Income | 18,35 | 0,00* |
| Knowledge that CRED helps prevent children's risks and growth and developmental disorders | 13,93 | 0,00* |

*Value = of the Chi-square statistic; P value=probability value used to contrast with the significance level (α=0.05).*

**Table 9. Association between cultural factors and sociodemographic data**

| Sociodemographic variables | Cultural factors | |
|---|---|---|
| | Value | p value (Sig.) |
| Sex of the child | 1,45 | 0,23 |
| Health Service | 0,81 | 0,85 |
| Age of the mother or caregiver | 14,88 | 0,01* |
| Marital status | 8,81 | 0,03* |
| Degree of education | 74,08 | 0,00* |
| Occupation | 68,90 | 0,00* |
| Number of children under the age of 5 | 8,84 | 0,01* |
| Household Income | 47,84 | 0,00* |
| Knowledge that CRED helps prevent children's risks and growth and developmental disorders | 29,90 | 0,00* |

*Value = of the Chi-square statistic; P value=probability value used to contrast with the significance level (α=0.05).*

**Table 10. Association between institutional factors and sociodemographic data**

| Sociodemographic variables | Institutional factors | |
|---|---|---|
| | Value | p value (Sig.) |
| Sex of the child | 0,81 | 0,37 |
| Health Service | 2,70 | 0,44 |
| Age of the mother or caregiver | 6,14 | 0,19 |
| Marital status | 13,02 | 0,01* |
| Degree of education | 10,70 | 0,01* |
| Occupation | 6,95 | 0,07 |
| Number of children under the age of 5 | 0,11 | 0,95 |
| Household Income | 2,90 | 0,23 |
| Knowledge that CRED helps prevent children's risks and growth and developmental disorders | 0,42 | 0,52 |

*Value = of the Chi-square statistic; P value=probability value used to contrast with the significance level (α=0.05).*

Table 9 presents the analysis exploring the relationship between cultural factors and the sociodemographic characteristics of the mothers. The findings reveal statistically significant associations (p < 0.05) across several variables, including the age of the mother or caregiver, marital status, educational level, occupation, number of children under 5 years old, family income, and awareness of how CRED programs contribute to preventing growth and development risks in children. Consequently, the null hypothesis is dismissed in favor of the alternative hypothesis, confirming a significant correlation between these sociodemographic variables and cultural factors.

Table 10 reveals that the variables of marital status and level of education possess a significance value (sig) below the predetermined alpha threshold of 0.05. Consequently, we reject the null hypothesis, positing independence between the specified sociodemographic variables and institutional factors. This implies that the analysis shows a significant association between marital status and level of education with institutional factors, indicating their interconnectedness within the scope of this study.

## 5. Discussion

CRED control is an intervention performed by nursing staff that must be timely, continuous, and chronological [15]. Among the factors influencing noncompliance with CRED controls. The sociodemographic characteristics. 55.6 per cent are girls, 94.7 per cent are members of the SIS, 100 per cent are mothers who attend the checkup, 62.0 per cent are aged between 19 and 35 years, marital status, 63.3 per cent are cohabitants, 43.2 per cent have reached secondary school, 33.7% are housewives, 43.2% have 2 children under 5 years of age, 68.6% have incomes of less than S/.1025 and 68.6% do not have the knowledge that CRED can prevent risks and disorders in children. Regarding socioeconomic factors, the mother's work schedule was evidenced (73.45%), and household chores (66.9%). Similar results were obtained with Chahuas E (16), with 56.0% working hours, 60.0% household chores, and Gonzales and Oré (14.3). 53% working hours. In the last decade, women have gained opportunities in the workplace, which represented a double burden to the domestic sphere, causing them to miss the CRED checkups of their youngest son since the family economy and also the free time they have is dedicated to household chores. [23]. In relation to cultural factors, we can show that due to the lack of knowledge of the frequency of CRED controls, 59.2% and 57.4% of mothers downplay the importance of CRED controls. In the same way, Chahuas E [16]. In her study, 76% of mothers do not know about the frequency of CRED control, and 40% of mothers do not believe that CRED control is important. So do Gonzales and Oré [15]. 53% are unaware of the frequency of CRED checkups and 39% said they do not recognize the importance of CRED checkups. Unlike Espinoza L, Valderrama C [14]. They indicate that only 29% do not know the frequency of CRED checks, and 25% do not know the importance of checks. As can be evidenced in different studies, the lack of knowledge of the frequency of CRED checkups and the scant importance that many mothers give to CRED checkups is a consequence that mothers do not attend appointments continuously, causing the nurse not to fulfill their role as an educator [11]. Likewise, in the institutional factors, waiting time with 72.8%, service hours with 72.2%, treatment of the admission service with 62.7% and the time used by the nurse was not adequate at 58.6%. In the same way, studies by González and Oré [15] found, with 76.0% the waiting time, 68.0% opening hours, and 60.0%, the nurse's attention time is not adequate, but demonstrated the opposite of the treatment of the admission service since 76.0% mention that it is not a factor of CRED noncompliance. While Espinoza L, Valderrama C [14]. In their study, 67.0% reported the waiting time, and 60% stated that the admission treatment was a reason for noncompliance. The difference between their study is that 71% of the mothers report that the nursing professionals are insufficient, while 33.1%. According to the Minsa in its CRED technical standard, it indicates that the time of each consultation should last 45 minutes; on the other hand, the hours of attention are from 7 am to 7 pm from Monday to Saturday; many times nurse has to look for her own registration sheets, which generates discomfort in the mothers [11].

## 6. Conclusion

In conclusion, 55.6% are girls, 94.7% have SIS, 100.0% are mothers, 32.5% are between 19 and 25 years old, 63.3% are cohabiting, 43.2% have secondary education, 33.7% are housewives, 43.2% have 2 children; 68.6% have a family income of less than S/. 1,025 and 67.7% of mothers are unaware that CRED can identify the child's risks and disorders in a timely manner. In terms of socioeconomic factors, the greatest difficulty occurs with working hours, where it occurs in 73.4% of the participants, followed by household chores in 66.9%. Likewise, cultural factors include the fact that 59.2% are unaware of the frequency of CRED citations, and 57.4% of mothers downplay the importance of CRED controls. With regard to institutional factors, 72.8% stated that the greatest difficulty was the waiting time for the checkup, and 72.2% said the hours of care were the reason why they did not take their child to the health centre. On the other hand, regarding the association between socioeconomic factors and the sociodemographic data of the participants, the p-value is less than 0.05 in the variables: level of education, occupation, number of children under 5 years of age, family income and knowledge that CRED helps prevent risks and disorders in children; There was an association between cultural factors and sociodemographic data such as the age of the mother or caregiver, marital status, level of education, occupation, number of children under 5 years of age, family income, and knowledge that CRED found a strong association. On the other hand, the only sociodemographic variables associated with institutional factors are marital status and level of education.

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