



Research Article

# Healthcare Utilization in the Context of the Implementation of Universal Health Coverage and COVID 19: Evidence from the Household Living Standards Survey, Côte d'Ivoire

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## Abstract

Universal Health Coverage was established to reduce financial barriers to healthcare. Nevertheless, inequalities in access—including cases of forgoing care—persist. This study analyzes the determinants of healthcare utilization in Côte d'Ivoire using data from the 2021 Harmonized Survey on Household Living Conditions. This study aims to analyse healthcare utilization in Côte d'Ivoire in the dual context of Universal health coverage scheme (CMU in Côte d'Ivoire) and the COVID-19 pandemic. The individual was taken as the unit of analysis. The analytical sample comprised 64,491 individuals drawn from 12,965 households. Analyses of healthcare utilization were restricted to the 17,220 individuals who reported a health problem in the preceding 30 days. Both the type of care sought and instances of forgone care were recorded. Logistic regression was used to assess associations between sociodemographic, socioeconomic and health-related characteristics and healthcare utilization. Among respondents, 11,017 (64.0%) had sought medical care, whereas 6,203 (36.0%) had renounced despite reporting a health problem. Self-medication was the principal reason for forgoing care. Healthcare utilization was positively associated with younger age (AOR = 2.50; 95% CI [2.03-3.08]), the presence of a chronic condition (AOR = 2.14; 95% CI [1.88-2.45]) and health insurance enrolment, particularly under the UHC scheme (AOR = 2.93; 95% CI [1.86-4.61]). Conversely, primary school education (AOR = 0.83; 95% CI [0.76-0.90]) and living in a household size with one person (AOR = 0.78; 95% CI [0.63-0.96]) were associated with lower odds of seeking care. Neither self-reported COVID-19 infection nor area of residence (rural versus urban) was significantly associated with healthcare utilization. Inequalities in access to care persist despite the introduction of CMU. Strengthening universal access will require both a broader benefit package for people living with chronic conditions and sustained action on health literacy.

## Keywords

Access to Healthcare, Healthcare Utilization, Universal Health Coverage, COVID-19 Self Reported Infection, Ivory Coast

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## 1. Introduction

Access to healthcare remains a central policy objective for governments across the globe, as it is recognized as a fundamental right [1]. Nonetheless, it constitutes a complex and multidimensional construct, governed by a variety of determinants that jointly shape both patterns of health service utilization and the degree of satisfaction expressed by users [2]. According to Aday and Andersen's conceptual model, access to healthcare depends not only on health needs but also on predisposing factors (sex, age, marital status), enabling factors (income, insurance, location), and contextual factors (organization of services) [3]. In this search of care, as with other goods, consumer are led to weigh trade-offs between several alternatives in terms of healthcare services or categories of practitioners [4]. Under budget constraints, individuals then opt for informal sources or forgo care altogether [5-7].

In sub-Saharan Africa, inequalities in healthcare utilization remain particularly pronounced and are exacerbated by socioeconomic, demographic, and geographic factor [8]. When using health services, populations may face catastrophic health expenditures or forgo care [9-11]. Such care-seeking renunciation is frequent in countries where out-of-pocket payments represent a substantial share of health financing [5-7, 12]. However, such forgone care can contribute to increased mortality and morbidity rates. To address these challenges, WHO recommends that countries implement financial risk protection system related to health services utilization [1].

In 2014, Côte d'Ivoire established Universal Health Coverage (CMU in Côte d'Ivoire) to improve financial accessibility and reduce household vulnerability to health expenditures [13]. Its rollout was gradual, starting with a student-focused pilot, before expanding to the general population in 2019, with collection of contribution on July 1, 2019, followed by full access to healthcare services on October 1, 2019. Despite this reform, challenges persist, most notably a low insurance coverage rate, estimated at 3.5% in 2021 [14].

This is the observation made in most health systems across West Africa - a situation aggravated by poverty, disparities in healthcare infrastructure, and high level of out-of-pocket payments [8, 15]. Furthermore, the COVID-19 pandemic exacerbated these disparities by disrupting healthcare delivery, deepening economic insecurity, and limiting access to essential services [5, 16, 17]. It thus highlighted the fragility of health systems and the need to rethink resilience and equity strategies [18]. Understanding care-seeking behaviors is essential for reformulating health policies and strategies. Within the dual context of Universal Health Coverage and the COVID-19 pandemic, this study aims to analyze the care-seeking behaviors of the population living in Côte d'Ivoire.

## 2. Materials and Methods

### 2.1. Data Source and Sampling

This study is a secondary data analysis of the Harmonized Survey on Household Living Conditions (EHCVM), conducted in Côte d'Ivoire in 2021 by the National Statistic Agency (ANStat). Carried out according to a standardized protocol across the West African Economic and Monetary Union (WAEMU), this survey provides a consolidated analytical dataset derived from individual and health data from the 2021 EHCVM. It includes sociodemographic variables, self-reported health information, variables related to health insurance and healthcare utilization, as well as complementary contextual variables regarding the area of residence.

The dataset comprises 12,965 households and 64,491 individuals sampled nationwide using a two-stage stratified random sampling method across 33 existing regions. Further details of the sampling procedure and participants' information are available elsewhere [19]. A total of 17,220 individuals who reported a health issue in the four weeks prior to the survey were included in the analysis.

### 2.2. Study Variables

#### 2.2.1. Dependent Variable

The dependent variable is healthcare utilization, coded into two categories: care-seeking (consultation at a health facility, pharmacy, or traditional healer within the previous 30 days) and forgone care (no consultation despite a reported health problem).

#### 2.2.2. Independent Variables

The explanatory variables include:

Sociodemographic characteristics: age, sex, marital status, educational attainment;

Socioeconomic characteristics: consumption expenditure quintiles (used as a proxy for living standards), health insurance status (CMU, other insurance, no insurance), area of residence (urban, rural), household size;

Health-related characteristics: type of self-reported morbidity, presence of a chronic illness, exposure to a COVID-19-related shock, exemption from care costs for specific population groups (special state-funded coverage).

### 2.3. Analytical Methods

Statistical analyses were performed using Stata software, version 17. Descriptive analysis was conducted to calculate frequencies and proportions in order to describe the population characteristics and healthcare utilization patterns.

Associations between healthcare utilization and individual characteristics were examined using Pearson's Chi-square test

when the conditions of their application were satisfied. Binary logistic regression was then performed to identify the factors associated with healthcare utilization, while simultaneously accounting for all variables included in the model. The threshold for statistical significance was set at 5%.

## 2.4. Ethical Considerations

The study was carried out using anonymized secondary data which guarantees the confidentiality and anonymity of the individuals surveyed. The use of Household Survey data was conducted within a formal legal framework, following a letter addressed to the National Institute of Statistics, which granted its authorization.

## 3. Results

### 3.1. Sociodemographic Characteristics of the Sample

The sociodemographic characteristics of the individuals are summarized in Table 1. The sample was slightly dominated

by women (50.9%), with a sex ratio of 0.96. The population was young: 43.7% of individuals were under 15 years of age, and the mean age was 23.86 years ( $\pm 19.28$ ). The median age was 18 years, with a range from 0 to 122 years. The distribution by age group (8 categories) showed a predominance of the 5-14 year age group (31.0%), followed by the 15-24 year group (16.1%) and the 0-4 year group (12.8%). Individuals aged 65 years and older accounted for only 3.8% of the sample.

Regarding marital status ( $n=45,567$  eligible individuals), 80.5% were single, 17.0% were married or in a consensual union, and 2.5% were divorced or widowed.

With respect to educational attainment among individuals over 3 years of age ( $n=43,936$ ), nearly half (48.1%) had no formal schooling, 32.8% had reached primary level, 14.5% secondary level, and 4.6% tertiary level. Among those with no formal schooling, literacy data were available for only 373 of 21,146 individuals (98.2% missing data).

This population was predominantly rural (61%).

The mean household size was 4.97 ( $\pm 2.83$ ), with a median of 5 persons. The most frequent category was >7 persons (32.2%), followed by 4-5 persons (28.4%) and 6-7 persons (25.9%).

**Table 1.** Sociodemographic and economic characteristics of individuals in the EHCVM ( $n=64,491$ ).

| Variables                          | Category                         | Number                | Percentage (%) |
|------------------------------------|----------------------------------|-----------------------|----------------|
| Sex                                | Male                             | 31,661                | 49.1           |
|                                    | Female                           | 32,830                | 50.9           |
|                                    | Sex ratio (M/F)                  | 1.0                   |                |
| Age (year)                         | 0 - 4                            | 8241                  | 12.8           |
|                                    | 5 - 14                           | 19,968                | 31.0           |
|                                    | 15 - 24                          | 10,385                | 16.1           |
|                                    | 25 - 34                          | 7774                  | 12.1           |
|                                    | 35 - 44                          | 7503                  | 11.6           |
|                                    | 45 - 54                          | 4985                  | 7.7            |
|                                    | 55 - 64                          | 3168                  | 4.9            |
|                                    | 65 and over                      | 2467                  | 3.8            |
|                                    | Average age (standard deviation) | 23.86 ( $\pm 19.28$ ) |                |
|                                    | Median (Min - Max)               | 18 (0 - 122)          |                |
| Marital status<br>( $n=45\ 567$ )  | Married/ Consensual union        | 7758                  | 17.0           |
|                                    | Widowed/ Divorced                | 1140                  | 2.5            |
|                                    | Single                           | 36,669                | 80.5           |
| Schooling level<br>( $n=43\ 936$ ) | None                             | 21,146                | 48.1           |
|                                    | Primary                          | 14,408                | 32.8           |
|                                    | Secondary                        | 6376                  | 14.5           |

| Variables                      | Category                     | Number              | Percentage (%) |
|--------------------------------|------------------------------|---------------------|----------------|
| No formal schooling<br>(n=373) | Superior level               | 2006                | 4.6            |
|                                | Yes                          | 1                   | 0.3            |
|                                | No                           | 372                 | 99.7           |
| Spending quintile              | Q1                           | 12,902              | 20             |
|                                | Q2                           | 12,905              | 20             |
|                                | Q3                           | 12,893              | 20             |
|                                | Q4                           | 12,897              | 20             |
|                                | Q5                           | 12,894              | 20             |
| Aera of residence              | Rural                        | 39,318              | 61.0           |
|                                | Urban                        | 25,173              | 39.0           |
| Household size                 | 1                            | 1294                | 2.0            |
|                                | 2 - 3                        | 7416                | 11.5           |
|                                | 4 - 5                        | 18,311              | 28.4           |
|                                | 6 - 7                        | 16,728              | 25.9           |
|                                | 7 and over                   | 20,742              | 32.2           |
|                                | Average (standard deviation) | 4.97 ( $\pm 2.83$ ) |                |
|                                | Median (Min - Max)           | 5 (1 - 28)          |                |

### 3.2. Health-related Characteristics

Morbidity reported over the past 30 days concerned 17,220 individuals, representing 26.7% of the sample. Among these, 10.9% (n=1,875) had a chronic illness (Table 2).

Distance to the primary healthcare facility (PHCF) was measured only among those who sought consultation (n=11,017). Among them, 76.8% resided less than 5 km away,

11.3% between 5 and 10 km, and 11.9% more than 10 km away.

Health insurance affiliation remained very low: 96.5% of the population had no coverage. The Universal Health Coverage scheme (CMU) covered 1.1%, the “Mutuelle Generale des Fonctionnaires de Cote d'Ivoire (MUGEFCI)” 1.2%, and private insurance 1.2% of the population. Only 1.5% of individuals benefited from special assistance (state support).

**Table 2.** Health-related characteristics of the EHCVM 2021 sample (n=64,491).

| Variables                                                   | Category    | Number | Percentage (%) |
|-------------------------------------------------------------|-------------|--------|----------------|
| Morbidity reported                                          | Yes         | 17,220 | 26.7           |
|                                                             | No          | 47,271 | 73.3           |
| Chronic disease (n=17,220)                                  | Yes         | 1875   | 10.9           |
|                                                             | No          | 15,345 | 89.1           |
| Distance to the primary healthcare facility (km) (n=11,017) | Less than 5 | 8462   | 76.8           |
|                                                             | [5 - 10]    | 1247   | 11.3           |
|                                                             | 10 and over | 1308   | 11.9           |
| Health insurance affiliation                                | CMU         | 687    | 1.1            |
|                                                             | MUGEFCI     | 797    | 1.2            |

| Variables                                     | Category                | Number | Percentage (%) |
|-----------------------------------------------|-------------------------|--------|----------------|
| Individuals benefited from special assistance | Private insurance       | 764    | 1.2            |
|                                               | None                    | 62,243 | 96.5           |
|                                               | Yes                     | 993    | 1.5            |
|                                               | No                      | 63,498 | 98.5           |
| COVID-19 self-reported                        | Only COVID-19           | 2412   | 3.7            |
|                                               | COVID and other illness | 644    | 1.0            |
|                                               | Other illness           | 687    | 1.1            |
|                                               | No                      | 60,748 | 94.2           |

### 3.3. Frequency of Healthcare Utilization

Among the 17,220 individuals who reported a health problem, 64.0% (n=11,017) had sought healthcare, while 36.0% (n=6,203) had forgone care. (Table 3).

Among those who consulted, the vast majority (97.3%) had opted for formal health care, compared with 2.7% for traditional medicine (healers/traditional practitioners).

Healthcare utilization was predominantly within the public

sector (74%), with rural health centers/dispensaries as the most frequent first point of consultation (34.1%), followed by general hospitals (20.0%) and urban health centers (16.0%). Private hospitals/clinics ranked fourth (12.5%). Pharmacies accounted for 6.3% of first consultations. Secondary- and tertiary-level facilities ranked lowest; university teaching hospitals (CHU in french) and regional hospitals (CHR in french) accounted for only 0.9% and 2.2%, respectively.

Regarding hospitalization over the past 12 months, only 3.9% (n=663) of individuals had been hospitalized.

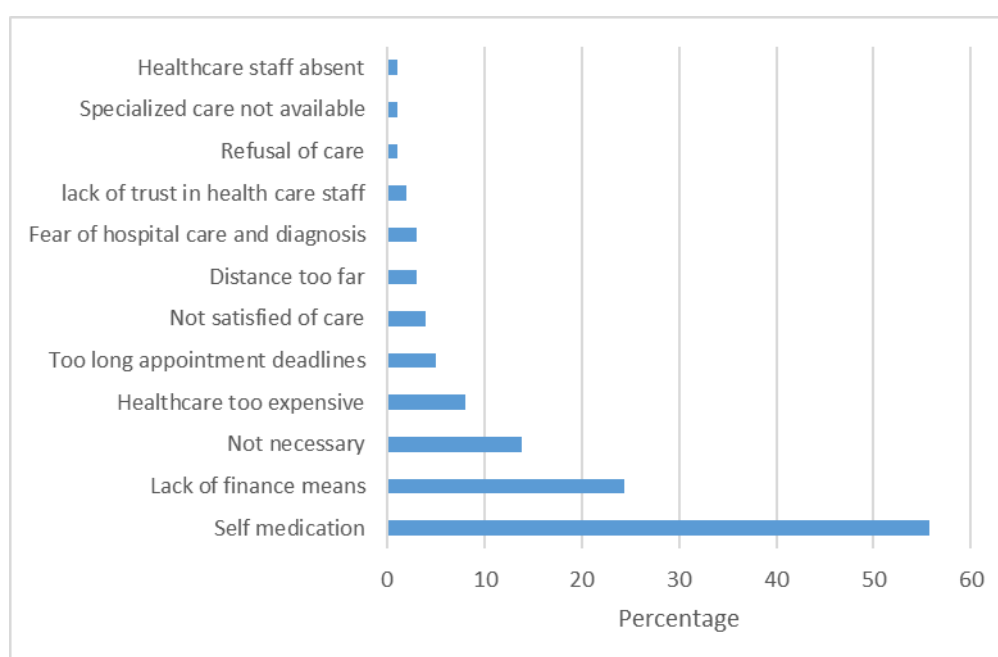
**Table 3.** Types of healthcare utilization among individuals with reported morbidity (n=17,220).

| Types of healthcare utilization | Number | Percentage (%) |
|---------------------------------|--------|----------------|
| Renouncement to care            | 6203   | 36.0           |
| Healthcare utilization          | 11,017 | 64.0           |
| Type of health care             |        |                |
| Formal health care              | 10,723 | 97.3           |
| Traditional medicine            | 294    | 2.7            |
| Place of first consultation     |        |                |
| University teaching hospital    | 94     | 0.9            |
| Regional hospital               | 243    | 2.2            |
| General hospital                | 2199   | 20.0           |
| Urban health center             | 1761   | 16.0           |
| Rural health center/ dispensary | 3762   | 34.1           |
| Other center                    | 92     | 0.8            |
| Private hospitals/clinics       | 1381   | 12.5           |
| Medical/dental practice         | 21     | 0.2            |
| Nursing/care practice           | 76     | 0.7            |
| Pharmacy                        | 692    | 6.3            |
| Company clinic / NGO            | 271    | 2.5            |

| Types of healthcare utilization | Number | Percentage (%) |
|---------------------------------|--------|----------------|
| Traditional medicine            | 294    | 2.7            |
| Home visit                      | 131    | 1.2            |
| Hospitalization (12 last month) |        |                |
| Yes                             | 663    | 3.9            |
| No                              | 16,557 | 96.1           |

### 3.4. Reasons for Non-utilization of Care

Self-medication was the main reason for forgoing care, reported by 55.63% of individuals, followed by lack of money (24.39%) and the perception that consultation was "not necessary" (13.77%).



**Figure 1.** Reasons for non-utilization of care in cases of self-reported morbidity.

### 3.5. Determinants of Health Care Utilization

Bivariate analysis identified several factors significantly associated with health care utilization (Table 4). The associated sociodemographic and economic characteristics were age, marital status, educational attainment, expenditure quintiles, and household size. The presence of financial risk protection

mechanisms against illness (health insurance and state assistance) was significantly associated with health care utilization, as was the presence of a chronic disease.

In contrast, sex, place of residence, and COVID-19 self-reported were not significantly associated with health care utilization. Regardless of distance to a primary health care facility, no forgone care was observed.

**Table 4.** Bivariate analysis of the factors associated with health care utilization (n=17,220).

| Variables | Category | Number | Utilization (%) | Renouncement (%) | p     |
|-----------|----------|--------|-----------------|------------------|-------|
| Sex       | Male     | 8184   | 63.8            | 36.2             | 0.618 |
|           | Female   | 9036   | 64.2            | 35.8             |       |

| Variables                                     | Category                    | Number | Utilization (%) | Renouncement (%) | p      |
|-----------------------------------------------|-----------------------------|--------|-----------------|------------------|--------|
| Age (year)                                    | 0-4                         | 2955   | 77.0            | 23.0             | <0.001 |
|                                               | 5-14                        | 4070   | 62.0            | 38.0             |        |
|                                               | 15-24                       | 1833   | 54.8            | 45.2             |        |
|                                               | 25-34                       | 1968   | 61.4            | 38.6             |        |
|                                               | 35-44                       | 2237   | 63.0            | 37.0             |        |
|                                               | 45-54                       | 1696   | 61.6            | 38.4             |        |
|                                               | 55-64                       | 1266   | 64.1            | 35.9             |        |
|                                               | 65 and over                 | 1195   | 61.7            | 38.3             |        |
| Marital status                                | Single                      | 14,711 | 63.4            | 36.6             | <0.001 |
|                                               | Married or Consensual union | 2165   | 66.9            | 33.1             |        |
|                                               | Widowed/ Divorced           | 344    | 68.3            | 31.7             |        |
|                                               | None                        | 7280   | 65.2            | 34.8             |        |
| Schooling level (n=11 996)                    | Primary                     | 3480   | 58.2            | 41.8             | <0.001 |
|                                               | Secondary                   | 800    | 63.6            | 36.4             |        |
|                                               | Superior level              | 436    | 62.4            | 37.6             |        |
| Spending quintile                             | Q1                          | 2514   | 51.3            | 48.7             | <0.001 |
|                                               | Q2                          | 3272   | 59.1            | 40.9             |        |
|                                               | Q3                          | 3272   | 61.1            | 38.9             |        |
|                                               | Q4                          | 3961   | 64.1            | 35.9             |        |
|                                               | Q5                          | 4201   | 66.5            | 33.5             |        |
| Household size                                | 1                           | 524    | 55.2            | 44.8             | <0.001 |
|                                               | 2-3                         | 2545   | 62.6            | 37.4             |        |
|                                               | 4-5                         | 5340   | 64.8            | 35.2             |        |
|                                               | 6-7                         | 4231   | 66.1            | 33.9             |        |
|                                               | 7 and over                  | 4580   | 62.9            | 37.1             |        |
| Chronic disease                               | Yes                         | 1875   | 76.7            | 23.3             | <0.001 |
|                                               | No                          | 15,345 | 62.4            | 37.6             |        |
| Distance ESPC* (n=11 017)                     | Less than 5                 | 8462   | 100             | 0.0              | NA     |
|                                               | [5 - 10]                    | 1247   | 100             | 0.0              |        |
|                                               | 10 and over                 | 1308   | 100             | 0.0              |        |
| Health insurance affiliation                  | CMU                         | 268    | 72,8            | 27,2             | <0.001 |
|                                               | MUGEFCI                     | 237    | 82,3            | 17,7             |        |
|                                               | Private insurance           | 256    | 80,5            | 19,5             |        |
|                                               | None                        | 16 459 | 63,3            | 36,7             |        |
| Individuals benefited from special assistance | Yes                         | 354    | 81,9            | 18,1             | <0.001 |
|                                               | No                          | 16 866 | 63,6            | 36,4             |        |
| Area of residence                             | Rural                       | 10 532 | 63,9            | 36,1             | 0.692  |
|                                               | Urban                       | 6 688  | 64.2            | 35.8             |        |
|                                               | Only COVID-19               | 2412   | 63.2            | 36.8             | 0.301  |

| Variables              | Category                | Number | Utilization (%) | Renouncement (%) | p |
|------------------------|-------------------------|--------|-----------------|------------------|---|
| COVID 19 self reported | COVID and other illness | 644    | 62.6            | 37.4             |   |
|                        | Other illness           | 687    | 49.3            | 50.7             |   |
|                        | No                      | 13,183 | 63.4            | 36.6             |   |

Factors significantly associated with increased health care utilization were:

Age 0-4 years (AOR=2.50; 95% CI [2.03-3.08];  $p<0.001$ ): children under 5 years old were 2.5 times more likely to seek care than those over 65, reflecting the priority given to child health.

Chronic disease (AOR=2.14; 95% CI [1.88-2.45];  $p<0.001$ ): individuals with a chronic disease were 2.1 times more likely to consult, reflecting a need for regular care.

CMU health insurance (OR=2.93; 95% CI [1.86-4.61];  $p<0.001$ ): affiliation with CMU increased the odds of utilization 2.9-fold.

Private insurance (OR=1.92; 95% CI [1.43-2.58];  $p<0.001$ ) and MUGEFCI (OR=1.56; 95% CI [1.16-2.08];  $p=0.003$ ): all forms of insurance favored utilization.

Special assistance/subsidized coverage (OR=1.82; 95% CI

[1.34-2.49];  $p<0.001$ ): receiving a subsidy increased the odds of utilization by 82%.

Being married (OR=1.23; 95% CI [1.08-1.39];  $p=0.001$ ): spousal support favored health care utilization.

The factors significantly associated with reduced of utilization were:

Primary education level (OR=0.83; 95% CI [0.76-0.90];  $p<0.001$ ): individuals with primary education had 17% lower odds of utilization than those with no schooling.

Household size = 1 (OR=0.78; 95% CI [0.63-0.96];  $p=0.016$ ): individuals living alone had 22% lower odds of health care utilization.

Age groups 5-64 years, divorced/widowed status, secondary and higher education levels, and household sizes 2-7 were not significant in multivariate analysis.

**Table 5.** Multivariate analysis of the factors associated with utilization of healthcare (n=11,996).

| Variables                        | Category                    | Adjusted OR | 95% CI          | p      |
|----------------------------------|-----------------------------|-------------|-----------------|--------|
| Age (Ref: 65 and over)           | 0-4                         | 2.497       | [2.027 - 3.076] | <0.001 |
|                                  | 5-14                        | 1.088       | [0.919 - 1.287] | 0.328  |
|                                  | 15-24                       | 0.892       | [0.749 - 1.062] | 0.199  |
|                                  | 25-34                       | 1.155       | [0.973 - 1.370] | 0.099  |
|                                  | 35-44                       | 1.141       | [0.967 - 1.346] | 0.118  |
|                                  | 45-54                       | 1.100       | [0.927 - 1.305] | 0.275  |
|                                  | 55-64                       | 1.144       | [0.956 - 1.369] | 0.141  |
| Marital status (Ref: Single)     | Married or Consensual union | 1.227       | [1.084 - 1.387] | 0.001  |
|                                  | Widowed/ Divorced           | 1.120       | [0.849 - 1.477] | 0.422  |
| Schooling level (Ref: none)      | Primary                     | 0.826       | [0.757 - 0.902] | <0.001 |
|                                  | Secondary                   | 0.991       | [0.846 - 1.161] | 0.910  |
|                                  | Superior level              | 0.953       | [0.766 - 1.187] | 0.670  |
| Household size (Ref: 7 and over) | 1                           | 0.777       | [0.632 - 0.955] | 0.016  |
|                                  | 2-3                         | 1.040       | [0.921 - 1.174] | 0.529  |
|                                  | 4-5                         | 1.016       | [0.917 - 1.125] | 0.760  |
|                                  | 6-7                         | 1.043       | [0.936 - 1.162] | 0.446  |
| Chronic disease (Ref: No)        | Yes                         | 2.142       | [1.876 - 2.445] | <0.001 |

| Variables                                               | Category          | Adjusted OR | 95% CI          | p      |
|---------------------------------------------------------|-------------------|-------------|-----------------|--------|
| Health insurance affiliation<br>(Ref: none)             | CMU               | 2.926       | [1.858 - 4.609] | <0.001 |
|                                                         | MUGEFCI           | 1.557       | [1.164 - 2.082] | 0.003  |
|                                                         | Private insurance | 1.923       | [1.431 - 2.583] | <0.001 |
| Individuals benefited from special assistance (Ref: No) | Yes               | 1.824       | [1.338 - 2.486] | <0.001 |

## 4. Discussion

### 4.1. Health Care Utilization and Forgone Care

Utilization of public facilities remains dominant, in contrast to Audibert's study in Senegal, which recorded a rate of 58.44% [20]. This could reflect better accessibility in the public sector. Indeed, in the context of the CMU rollout, health coverage has improved, with the number of ESPCs (primary health care facilities) increasing by nearly 30% between 2018 and 2020 [21, 22], and our study showed that nearly two people in ten lived within 5 km of an ESPC. However, although the use of modern health care predominates, the high rate of forgone care (36%) raises questions about the real effectiveness of the CMU and its uptake by the population. Furthermore, the low level of education among the population constitutes a barrier to health care utilization. Indeed, educational attainment is a determinant of individuals' health care-seeking behavior [20]. The main reasons for non-utilization were self-medication (55.6%), lack of financial means (24.4%), and the perception that care was not necessary (13.8%). This finding is a reminder that universal coverage cannot be limited to formal enrollment but must guarantee care that is effectively provided and perceived as useful by the population [23].

The prominence of self-medication suggests distrust of, or a perceived mismatch with, the formal health care supply. In sub-Saharan Africa, the pursuit of alternative, less costly, and more accessible solutions is common in the face of financial and organizational barriers [8, 15].

Individuals with a chronic disease made greater use of health care, although instances of forgone care were nonetheless recorded. This suggests a need to extend CMU coverage for the relevant care services. Indeed, a study in Côte d'Ivoire showed that, in the absence of protection mechanisms, forgone care among diabetic patients was often substantial [24].

### 4.2. Role of the CMU and Insurance Coverage

The results confirm the protective role of health insurance: insured individuals, particularly those covered by the CMU, make greater use of modern health care and forgo care less often than the uninsured. Nevertheless, the low effective coverage rate of the CMU limits its impact. In 2021, less than 10%

of the Ivorian population was effectively covered [25], which 11ance of care continues to be significant. The high reliance on self-medication reflects both financial constraints and a perceived inadequacy of the formal healthcare supply. These findings advocate scaling up the implementation of Universal Health Coverage (CMU) while addressing public perceptions of care to enhance health literacy and trust in the health system. Ultimately, an inclusive and sustainable strategy is essential to driving progress toward equity and universal health coverage. The development of equitable health policy requires a better understanding of healthcare-seeking behaviors and of the influence of health system reforms on the effective utilization of services for better suited to the realities of population.

## Abbreviations

|     |                                |
|-----|--------------------------------|
| AOR | Adjusted Odd Ratio             |
| CMU | Couverture Maladie Universelle |

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## Author Contributions

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## Data Availability Statement

The data supporting the results of this study are available from the corresponding author upon reasonable request.

## Conflicts of Interest

The authors declare no conflicts of interest.

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