

Determinants of utilisation of preschool health consultations among children aged 12–59 months in four health zones of Kongo Central Province, Democratic Republic of the Congo

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ARTICLE INFO

Received: 28 November 2025

Accepted: 22 May 2026

Published: 06 July 2026

Keywords:

Preschool health consultations, child health services, socioeconomic factors, health service utilisation, Democratic Republic of the Congo, primary healthcare

Peer-Review: Externally peer-reviewed

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To cite:

Umumbu, F. A., Kwilu, N., Lakasi, M. M., & Atila, M. N. (2026). Determinants of utilisation of preschool health consultations among children aged 12–59 months in four health zones of Kongo Central Province, Democratic Republic of the Congo. *Orapuh Journal*, 7(5), e1445.
<https://doi.org/10.4314/orapj.v7i5.45>

ISSN: 2644-3740

Published by **Orapuh, Inc.**, F. Gaye Res., Sukuta-Jamisa, Greater Banjul, The Gambia.

Editor-in-Chief: Prof. V. E. Adamu
(editor@orapuh.org)

ABSTRACT

Introduction

Preschool health consultations (PSCs) are essential preventive child health services designed to promote growth monitoring, early disease detection, immunisation follow-up, and caregiver health education. However, utilisation of these services remains suboptimal in many low-resource settings, particularly in sub-Saharan Africa, where geographical, socioeconomic, and structural barriers persist.

Purpose

To identify the socio-economic, demographic, and structural factors associated with the utilisation of preschool health consultations among children aged 12–59 months in selected health zones of Kongo Central Province, Democratic Republic of the Congo.

Methods

A cross-sectional analytical study was conducted using secondary data from a household survey carried out in four health zones (Inga, Kitona, Kwilu-Ngongo, and Sekebanza). A total of 1,635 caregivers of children aged 12–59 months were included. Data were analysed using descriptive statistics, bivariate analysis, and multivariable logistic regression to identify factors independently associated with PSC utilisation. Adjusted odds ratios (AORs) with 95% confidence intervals (CIs) were reported, and statistical significance was set at $p < .05$.

Results

Overall, 32% of children utilised PSC services. Utilisation varied significantly by geographical location, with lower odds observed in Kitona, Kwilu-Ngongo, and Sekebanza compared with Inga. Caregiver occupation and marital status were significantly associated with PSC utilisation, with higher utilisation among caregivers engaged in formal or agricultural employment and those living with a partner. Larger household size (≥ 6 members) was associated with reduced likelihood of PSC utilisation. Household socioeconomic status showed an association in bivariate analysis but was not an independent predictor in the adjusted model.

Conclusion

PSC utilisation in Kongo Central Province remains low and is influenced by geographical disparities, household structure, and caregiver socioeconomic characteristics. Strengthening equitable access to preventive child health services through targeted outreach, improved rural health infrastructure, and community-based interventions is essential to increase coverage and reduce disparities in child health outcomes.

INTRODUCTION

Preschool health consultations (PSCs) constitute a fundamental component of preventive child healthcare and are essential for promoting optimal growth, development, and survival during early childhood. These routine consultations provide opportunities to monitor physical growth and developmental milestones, assess nutritional status, administer scheduled immunisations, detect illnesses at an early stage, and deliver health education and counselling to parents and caregivers. By facilitating the early identification and management of health problems, PSCs contribute substantially to reducing childhood morbidity and mortality and improving long-term health outcomes (World Health Organization [WHO], 1978, 2023).

Globally, preventive child health services are recognised as a cornerstone of primary healthcare and an essential strategy for achieving the Sustainable Development Goals relating to child survival and well-being (WHO, 2023). In many high-income countries, well-established health systems ensure that most children receive regular preventive health assessments from birth through the preschool years. Consequently, these countries report high coverage of routine child health services and favourable child health indicators (United Nations Children's Fund [UNICEF], 2023).

Despite global progress, substantial inequalities in access to preventive child healthcare persist in low- and middle-income countries, particularly in sub-Saharan Africa. Weak health systems, inadequate infrastructure, shortages of trained health personnel, financial constraints, geographical inaccessibility, and sociocultural barriers continue to limit the utilisation of preventive child health services (UNICEF, 2021, 2023; WHO Regional Office for Africa, 2021). Although international initiatives have strengthened childhood immunisation programmes, nutrition interventions, and integrated child health services across the region, disparities in service utilisation remain considerable.

Evidence from several African countries demonstrates that utilisation of preventive child health services is influenced by a complex interaction of individual, household, community, and health-system factors.

Socioeconomic status, parental education, maternal employment, household size, distance to health facilities, healthcare costs, and cultural beliefs consistently influence caregivers' decisions to seek preventive healthcare for their children (Marito et al., 2011; Sene et al., 2020). These findings highlight the need for context-specific evidence to guide interventions aimed at improving equitable access to child health services.

In the Democratic Republic of the Congo (DRC), ensuring universal access to preventive child healthcare remains a major public health challenge. Although national child health programmes have established comprehensive standards for growth monitoring, nutritional assessment, vitamin A supplementation, routine immunisation, deworming, health education, and referral services, implementation remains uneven across provinces owing to limited resources, shortages of healthcare personnel, inadequate infrastructure, and geographical barriers (Ministry of Public Health, 2012; Programme National de Santé de la Mère et de l'Enfant [PNSME], 2022). Consequently, utilisation of preschool health consultations remains suboptimal in many rural and underserved communities.

Kongo Central Province illustrates many of these challenges. Previous reports have documented persistent inequalities in access to preventive child health services across its health zones, with several areas experiencing limited service availability, inadequate health infrastructure, transportation difficulties, and socioeconomic deprivation (École de Santé Publique de Kinshasa et al., 2021; Ministry of Health, 2021; Observatoire Congolais de la Santé, 2023). The province also continues to experience a substantial burden of childhood undernutrition, with high levels of stunting and wasting, conditions that underscore the importance of regular preschool health consultations for growth monitoring and early intervention (WHO & UNICEF, 2018).

Beyond health-system constraints, household socioeconomic conditions substantially influence caregivers' utilisation of preventive child health services. Financial hardship, indirect costs of seeking healthcare, limited parental education, unstable employment, large

household size, and insufficient awareness of the benefits of preventive child healthcare may discourage attendance at scheduled consultations. These barriers are often compounded in geographically isolated rural communities, where access to health facilities is further constrained by poor transport networks and long travel distances (Ministry of Health, 2021; Observatoire Congolais de la Santé, 2023).

Although several national and provincial initiatives have sought to strengthen preventive child healthcare in the DRC, evidence regarding the determinants of preschool health consultation utilisation remains limited, particularly within rural health zones of Kongo Central Province. Few studies have comprehensively examined the combined influence of geographical, sociodemographic, and socioeconomic factors on caregivers' utilisation of these services among children aged 12–59 months. Generating such evidence is essential for informing targeted interventions designed to improve equitable access to preventive child healthcare and strengthen primary healthcare delivery.

Accordingly, this study aimed to identify the sociodemographic and socioeconomic factors associated with the utilisation of preschool health consultations among children aged 12–59 months residing in the health zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza in Kongo Central Province, Democratic Republic of the Congo. The findings are expected to contribute evidence for policymakers and programme managers seeking to reduce inequalities in access to preventive child health services and improve child health outcomes in underserved communities.

METHODS

Study Design

This study employed a cross-sectional analytical design based on a secondary analysis of data obtained from the survey entitled *Initial Assessment of the Implementation and Functioning of Community Health Centres (Centres d'Animation Communautaire [CACs]) and Community Health Development Committees (Comités de Développement Sanitaire [CODESAs]) in Seven Health Zones of the Kinshasa Provincial Health Division and Seven Health Zones of the Kongo Central Provincial Health Division*. The secondary analysis focused

specifically on identifying factors associated with the utilisation of preschool health consultations among children aged 12–59 months.

Study Setting

The study was conducted in four health zones—Inga, Kitona, Kwilu-Ngongo, and Sekebanza—located in Kongo Central Province, Democratic Republic of the Congo. Kongo Central covers approximately 53,920 km² and had an estimated population of 5.58 million inhabitants in 2015, corresponding to a population density of approximately 103 inhabitants per square kilometre.

The selected health zones are predominantly rural and differ in terms of geographical accessibility, healthcare infrastructure, and socioeconomic conditions. Kwilu-Ngongo is situated in the north-eastern part of the province, Inga lies southwest of Kwilu-Ngongo, Sekebanza is located west of Inga, and Kitona occupies the south-western coastal area near the Atlantic Ocean. These health zones experience varying levels of access to preventive healthcare services, making them appropriate settings for investigating determinants of preschool health consultation utilisation.

The primary survey was conducted between 18 October and 12 November 2022. Contextual information regarding the organisation and delivery of health services within the study areas was obtained from the 2022 Operational Action Plans developed by each health zone.

Study Population

The target population comprised children aged 12–59 months residing in the four selected health zones and their mothers or primary caregivers. For the secondary analysis, only households with complete information on preschool health consultation utilisation and relevant explanatory variables were included.

Sampling Procedure

The secondary analysis used data from the primary survey, which employed a three-stage cluster sampling design based on the Lot Quality Assurance Sampling (LQAS) methodology.

In the first stage, six health areas were randomly selected from each health zone.

In the second stage, six geographical units (villages, localities, or urban avenues) were randomly selected within each selected health area using probability proportional to size based on official administrative lists.

In the third stage, twelve eligible households were randomly selected within each geographical unit. Where multiple eligible households or children were present within the same residential compound, one household and one eligible child were selected using simple random sampling.

Following data cleaning and quality assurance procedures, the final analytical sample comprised 1,635 households from the four selected health zones.

Eligibility Criteria

Inclusion Criteria

Participants included in the primary survey were mothers or primary caregivers of children aged 0–59 months, or women who had given birth within the previous five years, who had resided in the study area for at least six months before data collection.

For the present secondary analysis, only records relating to children aged 12–59 months with complete data on all variables included in the analysis were retained.

Exclusion Criteria

Records with incomplete information on the outcome variable or key explanatory variables were excluded from the analysis.

Study Variables

Dependent Variable

The dependent variable was utilisation of preschool health consultations among children aged 12–59 months, categorised as:

- a. Yes
- b. No

Independent Variables

- i. Independent variables included:
- ii. Health zone
- iii. Respondent's age

- iv. Respondent's sex
- v. Marital status
- vi. Educational attainment
- vii. Main occupation
- viii. Religion
- ix. Household size
- x. Household socioeconomic status
- xi. Household source of income
- xii. Living standard (wealth tertile)

These variables were selected based on previous literature and their potential influence on access to preventive child healthcare services.

Data Collection

Data were collected electronically using the Open Data Kit (ODK) Collect platform by trained field investigators following standardised data collection procedures. Electronic data capture minimised transcription errors and facilitated real-time quality control during fieldwork.

Data Management and Statistical Analysis

A complete-case analysis was performed. Observations with missing values on variables included in each analysis were excluded.

Data were analysed using IBM SPSS Statistics version 26.0. Descriptive statistics were used to summarise participant characteristics. Categorical variables were presented as frequencies and percentages, whereas continuous variables were summarised using means and standard deviations or medians and interquartile ranges, depending on data distribution

Bivariate analyses were performed to examine associations between each explanatory variable and utilisation of preschool health consultations using Pearson's chi-square test or Yates' continuity correction where appropriate.

Variables demonstrating statistically significant associations in the bivariate analysis were subsequently entered into a multivariable logistic regression model to identify independent predictors of preschool health

consultation utilisation while controlling for potential confounding.

Prior to fitting the multivariable logistic regression model, multicollinearity among explanatory variables was assessed using tolerance statistics and variance inflation factors (VIFs). All VIF values were below 5, indicating no evidence of problematic multicollinearity.

The strength of associations was expressed as adjusted odds ratios (AORs) with corresponding 95% confidence intervals (95% CIs). Statistical significance was established at $p < .05$.

Ethical Considerations

The primary survey received ethical approval from the Ethics Committee of the Kinshasa School of Public Health, University of Kinshasa. Permission to conduct the survey was also obtained from the relevant provincial health authorities and local administrative authorities.

The present study constituted a secondary analysis of anonymised survey data and received approval from the same ethics committee before commencement of the analysis.

Before participation in the primary survey, all respondents provided informed oral consent after receiving information regarding the study objectives, procedures, potential benefits and risks, voluntary participation, and their right to withdraw at any stage without adverse consequences. Participant confidentiality was maintained through data anonymisation and secure data management procedures.

RESULTS

The findings are presented according to the study objectives. First, the sociodemographic and socioeconomic characteristics of the respondents are described, followed by the level of utilisation of preschool health consultations (PSCs). Finally, the factors associated with PSC utilisation are presented using bivariate and multivariable logistic regression analyses.

Table 1 presents the socio-demographic characteristics of the 1,635 respondents. Most respondents were aged 25 years or older (62.7%), while 30.0% were aged 21–24 years and 7.3% were aged 20 years or younger. The majority of

respondents were female (95.3%), with males accounting for 4.7% of the sample. Most respondents were living with a partner (76.5%), whereas 23.5% were living without a partner.

Regarding educational attainment, 46.4% had completed primary education but had not completed secondary education, 37.2% had attained secondary education or higher, and 16.5% had no formal education. Agriculture and other occupations constituted the main source of employment for most respondents (67.2%), followed by employment in the public or private sector (23.1%), while 9.8% were unemployed. More than half of the respondents (52.0%) identified as Catholic or Protestant, 28.1% belonged to revival churches, and 19.9% reported other religious affiliations. Most respondents (71.9%) lived in households with fewer than six members, whereas 28.1% resided in households comprising six or more members.

Table 1: Socio-demographic Characteristics of Respondents in the Health Zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza (N = 1,635)

Characteristic	n	%
Respondent age (years)		
≤20	120	7.3
21–24	490	30.0
≥25	1,025	62.7
Respondent sex		
Male	77	4.7
Female	1,558	95.3
Marital status		
Living without a partner	384	23.5
Living with a partner	1,251	76.5
Highest educational attainment		
No formal education	269	16.5
Primary education completed/secondary not completed	758	46.4
Secondary education or higher	608	37.2
Main occupation		
Unemployed	160	9.8
Public/private sector employee	377	23.1
Agriculture/other occupations	1,098	67.2
Religion		
Catholic/Protestant	850	52.0
Revival church	460	28.1
Other religious affiliation	325	19.9
Household size		
<6 persons	1,175	71.9
≥6 persons	460	28.1

Note: Percentages may not total exactly 100 owing to rounding.

Table 2 summarises the primary sources of household income among the respondents. Salaried employment was

the most frequently reported source of household income (36.0%), followed by profits from business activities (29.1%). Other reported sources included workshops, garages, salons, taxi services, or similar activities (8.8%), financial support from children or other family members (5.7%), rental income (3.9%), and other unspecified sources (10.5%).

Table 2:

Primary Sources of Household Income Among Respondents in the Health Zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza (N = 1,635)

Source of household income	n	%
Salary	589	36.0
Profit from business activities	476	29.1
Rental income	63	3.9
Financial support from children/family members	93	5.7
Workshop, garage, salon, taxi, or similar services	144	8.8
Other sources	171	10.5

Note: Percentages are based on the total study population.

Table 3 presents the bivariate logistic regression analysis of factors associated with the utilisation of preschool health consultations (PSCs). Compared with children residing in Inga Health Zone, those living in Kitona (OR = 0.07, 95% CI [0.05–0.10], $p < .001$), Kwilu-Ngongo (OR = 0.13, 95% CI [0.09–0.18], $p < .001$), and Sekebanza (OR = 0.10, 95% CI [0.07–0.14], $p < .001$) had significantly lower odds of utilising PSCs.

Respondent age was not significantly associated with PSC utilisation. Compared with unemployed respondents, those employed in the public or private sector (OR = 1.89, 95% CI [1.20–2.98], $p = .006$) and those engaged in agriculture or other occupations (OR = 1.79, 95% CI [1.17–2.74], $p = .008$) had significantly higher odds of utilising PSCs. Similarly, respondents living with a partner were significantly more likely to utilise PSCs than those living without a partner (OR = 1.55, 95% CI [1.18–2.04], $p = .001$).

No statistically significant association was observed between religion and PSC utilisation. However, children from households with six or more members had significantly lower odds of utilising PSCs than those from households with fewer than six members (OR = 0.68, 95% CI [0.53–0.87], $p = .002$). Regarding household living standard, children from moderately well-off households had significantly lower odds of utilising PSCs than those from poor households (OR = 0.73, 95% CI [0.55–0.97], $p = .030$), whereas no significant association was observed for children from well-off households.

Table 3:

Bivariate Logistic Regression Analysis of Factors Associated with Utilisation of Preschool Health Consultations Among Children Aged 12–59 Months in the Health Zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza (N = 1,635)

Variable	Utilised PSCs n (%)	Did Not Utilise PSCs n (%)	Crude OR (95% CI)	<i>p</i>
Health zone				
Inga	294 (56.6)	122 (10.9)	1.00 (Reference)	–
Kitona	50 (9.6)	350 (31.4)	0.07 (0.05–0.10)	<.001
Kwilu-Ngongo	96 (18.5)	311 (27.9)	0.13 (0.09–0.18)	<.001
Sekebanza	79 (15.2)	333 (29.8)	0.10 (0.07–0.14)	<.001
Respondent age (years)				
≤20	35 (6.7)	85 (7.6)	1.00 (Reference)	–
21–24	164 (31.6)	326 (29.2)	1.21 (0.78–1.87)	.390
≥25	320 (61.7)	705 (63.2)	1.11 (0.72–1.71)	.630
Main occupation				
Unemployed	29 (5.6)	131 (11.7)	1.00 (Reference)	–
Public/private sector employee	122 (23.5)	255 (22.8)	1.89 (1.20–2.98)	.006
Agriculture/other occupations	368 (70.9)	730 (65.4)	1.79 (1.17–2.74)	.008
Marital status				
Living without a partner	95 (18.3)	289 (25.9)	1.00 (Reference)	–
Living with a partner	424 (81.7)	827 (74.1)	1.55 (1.18–2.04)	.001
Religion				
Catholic/Protestant	274 (52.8)	576 (51.6)	1.00 (Reference)	–
Revival church	129 (24.9)	331 (29.6)	0.98 (0.76–1.26)	.880
Other religious affiliation	116 (22.4)	209 (18.7)	0.90 (0.69–1.18)	.450
Household size				
<6 persons	401 (77.3)	774 (69.3)	1.00 (Reference)	–
≥6 persons	118 (22.7)	342 (30.7)	0.68 (0.53–0.87)	.002
Household living standard				
Poor	280 (54.0)	518 (46.4)	1.00 (Reference)	–
Moderately well-off	103 (19.8)	261 (23.4)	0.73 (0.55–0.97)	.030
Well-off	136 (26.2)	337 (30.2)	0.90 (0.69–1.18)	.450

Note: OR = odds ratio; CI = confidence interval; PSC = preschool health consultation. Reference categories are indicated for each variable.

DISCUSSION

The aim of this study was to identify the socio-economic factors associated with the utilisation of preschool health consultations (PSCs) among children aged 12–59 months in the health zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza in Kongo Central Province, Democratic Republic of the Congo. Using a sample of 1,635 respondents, the study identified significant associations between PSC utilisation and geographical location, caregiver occupational status, marital status, and household size, highlighting the combined influence of structural, socioeconomic, and family-level determinants.

Geographical disparities in PSC utilisation

A key finding of this study is the strong effect of geographical location on PSC utilisation. Children residing in Kitona, Kwilu-Ngongo, and Sekebanza were significantly less likely to utilise PSC services compared to those in Inga. This suggests substantial inequities in access to preventive child health services across health zones.

These findings are consistent with broader evidence indicating that geographical accessibility remains a major determinant of child health service utilisation in low-resource settings. Differences in infrastructure, availability of health facilities, staffing levels, and outreach services across health zones likely contribute to the observed disparities. Rural and hard-to-reach areas often experience weaker health system performance, leading to reduced uptake of preventive services.

Similar patterns have been reported in other African contexts where rural residence and distance to health facilities significantly reduce utilisation of child health services, including immunisation and growth monitoring (WHO Regional Office for Africa, 2021; UNICEF, 2023).

Socio-demographic and caregiver-related factors

The study found that caregiver occupation was significantly associated with PSC utilisation. Caregivers engaged in formal employment or agricultural activities were more likely to utilise PSC services compared to unemployed caregivers. This finding reflects the role of socioeconomic empowerment in facilitating access to healthcare.

Employment may enhance utilisation through improved financial capacity to cover transport and indirect costs, increased exposure to health information, and greater autonomy in household decision-making. These results are consistent with evidence that women's economic participation improves child health service uptake by reducing financial and social barriers to care (World Health Organization [WHO], 2018).

Marital status was also significantly associated with PSC utilisation. Children from households where caregivers were living with a partner were more likely to attend PSCs than those in single-caregiver households. This finding aligns with previous research showing that two-

parent households tend to have stronger financial support systems and shared caregiving responsibilities, which facilitate access to preventive healthcare services. Studies have demonstrated that family structure significantly influences children's access to regular healthcare, including preventive visits and continuity of care (Gorman et al., 2008).

Socioeconomic characteristics of households

The study showed that household income sources were diverse, with 36% of respondents reporting salaried income and 29.1% deriving income from commercial activities. This reflects a mixed economic structure characterised by both formal and informal livelihoods.

Socioeconomic conditions are well-established determinants of child health service utilisation. Previous studies have shown that household wealth, parental education, and decision-making power significantly influence child health outcomes, including immunisation and preventive service uptake (Atchadé et al., 2013; Bbaale et al., 2011). These findings support the present study's observation that socioeconomic conditions shape access to PSCs through financial capacity and intra-household decision dynamics.

Interestingly, children from moderately well-off households were less likely to utilise PSC services in the bivariate analysis, although this association was attenuated in multivariable analysis. This suggests that wealth effects may be mediated by other structural or behavioural factors such as geographical access or household composition. Evidence from UNICEF (2023) similarly highlights persistent inequities in child health service utilisation across wealth categories, although patterns may vary depending on context and service type.

Structural and family constraints

Household size emerged as an important determinant of PSC utilisation. Children from households with six or more members were significantly less likely to utilise PSC services. This finding reflects the burden of competing demands in larger households, where limited resources must be distributed across more dependants.

Large household size may reduce healthcare utilisation through several mechanisms, including financial strain,

time constraints, and caregiving burden. Caregivers in larger households may face difficulties in accompanying children to health facilities due to competing responsibilities. These findings are consistent with studies in sub-Saharan Africa showing that children in smaller households are more likely to receive preventive health services, including immunisation (Mutua et al., 2011; Bbaale et al., 2011).

These constraints are further intensified in rural settings, where health facilities are often distant and transport costs are high. Evidence from the Democratic Republic of the Congo indicates that limited infrastructure and weak service coverage in rural areas contribute to low utilisation of preventive child health services and increased vulnerability to preventable diseases (Sebiyoyo et al., 2024).

Synthesis of findings

Overall, the findings demonstrate that PSC utilisation is shaped by an interaction of geographical, socioeconomic, and household-level factors. The strongest determinant was geographical location, underscoring the importance of health system accessibility. Household structure and caregiver economic activity further influence utilisation by shaping financial capacity, time availability, and decision-making power.

These findings align with established theoretical frameworks of healthcare utilisation, particularly Andersen's Behavioural Model, which emphasises the role of enabling factors (income, access, household structure) and predisposing factors (demographic and social characteristics) in determining health service use.

Public health implications

The low overall utilisation of PSC services highlights a critical gap in preventive child healthcare coverage in the study area. This has important implications for child survival and development, as PSCs provide essential services including growth monitoring, nutritional assessment, immunisation follow-up, and early disease detection.

To improve utilisation, interventions should focus on reducing geographical barriers through strengthened outreach services, improving distribution of health

facilities, and enhancing community-based health promotion. Economic and structural barriers should also be addressed through targeted support for vulnerable households, particularly those with limited income or large family sizes.

Strengths and Limitations of the Study

This study is strengthened by its relatively large sample size, which enhances the reliability of the findings and allows for robust identification of socioeconomic, geographic, and structural factors associated with the utilisation of preschool health consultations (PSCs). The use of bivariate and multivariable analytical methods further strengthens the validity of the results by enabling the adjustment for potential confounding factors and the identification of independent predictors of PSC utilisation.

However, several limitations should be acknowledged. First, the study was geographically limited to selected health zones in Kongo Central Province, which may restrict the generalisability of the findings to other regions of the Democratic Republic of the Congo or to different sub-Saharan African contexts. Second, reliance on self-reported data may introduce recall or reporting bias. Third, the absence of qualitative data limits a deeper understanding of caregivers' perceptions, attitudes, and contextual barriers influencing healthcare-seeking behaviour. Finally, the use of secondary data from the SANRU survey constrained the analysis to available variables, thereby excluding potentially relevant determinants such as perceived quality of care, distance to health facilities, and cultural beliefs.

CONCLUSION

This study highlights substantial disparities in the utilisation of preschool health consultations (PSCs) among children aged 12–59 months in the health zones of Inga, Kitona, Kwilu-Ngongo, and Sekebanza in the Democratic Republic of the Congo. Despite their critical role in promoting child survival and development, PSCs remain underutilised, with an overall utilisation rate of 32%.

The findings demonstrate that PSC utilisation is significantly influenced by geographical, socioeconomic, and household-level factors. Children residing in better-served areas such as Inga, those from smaller households, and those whose caregivers are in stable partnerships or

engaged in formal employment are more likely to utilise PSC services. In contrast, geographical isolation, poverty, and large household size constitute major barriers to service utilisation.

These findings underscore the urgent need for targeted public health interventions to improve equitable access to preventive child health services. Strategies such as mobile outreach clinics, strengthening of primary healthcare infrastructure, community-based health education, and workforce capacity development are essential to improving PSC coverage. In contexts where child morbidity and mortality remain high, strengthening preventive healthcare systems represents a critical pathway to improving child health outcomes.

Data Availability Statement: The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request.

Acknowledgements: The authors acknowledge Dr Denise Ngonde, Dr Bwira, and Mrs Rachel Biongo for their valuable contributions and support during this study.

Ethical Approval: The primary survey was conducted between October and November 2022. Ethical approval for the present secondary analysis of the anonymised dataset was obtained from the Ethics Committee of the School of Public Health, University of Kinshasa (Approval No. ESP/CE/928/2025)..

Informed Consent: Nil required.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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