

Review Article

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The Non-Communicable Disease Profile of Jamaican Children: Self-Reported Morbidity, Respiratory Disease, Emerging Cardiometabolic Risk, Socioeconomic Vulnerability, and Comparative Evidence from Jamaica, the Caribbean, and the Globe

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ABSTRACT

Background: Non-communicable diseases (NCDs) are increasingly recognised as life-course phenomena whose biological and behavioural antecedents frequently begin during childhood. However, the NCD literature on Jamaica has concentrated predominantly on adults, leaving the childhood profile comparatively underdeveloped.

Objective: This study examines the self-reported NCD profile, functional health, health insurance, and socioeconomic circumstances of Jamaican children aged 0–14 years and situates the findings within Jamaican, Caribbean, and global evidence.

Methods: A secondary cross-sectional analysis was conducted using supplied survey outputs containing 926 children aged 0–14 years. Descriptive prevalence estimates and age-cohort chi-square analyses were interpreted alongside published epidemiological evidence on asthma, obesity, and paediatric NCD risk.

Results: Asthma was the most frequently reported childhood chronic condition at 6.0%, whereas epilepsy was reported by 0.5%, other mental disorders by 0.4%, heart disease by 0.3%, diabetes and hypertension by 0.2% each, and cancer, arthritis, depression, and dementia by approximately 0.1% each. Functional health was comparatively favourable, with 96.0% of valid child observations reporting no difficulty, yet 86.1% of children were uninsured, and 51.0% were classified within the two poorest socioeconomic quintiles. Jamaican external evidence presents a less reassuring future-risk profile: 23.3% of school-going adolescents aged 13–17 years were overweight and 9.2% obese in the 2017 Global School-based Student Health Survey.

Conclusion: The childhood NCD profile in Jamaica is characterised by relatively low reported established cardiometabolic disease but appreciable respiratory morbidity and substantial upstream metabolic and socioeconomic vulnerability. Childhood NCD policy should integrate asthma control with obesity prevention, healthy food environments, physical activity, surveillance, early risk detection, and equitable access to preventive care.

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Introduction

Non-communicable diseases are conventionally associated with adulthood and ageing, yet this framing increasingly conflicts with life-course epidemiology. Biological susceptibility to cardiovascular disease, diabetes, chronic respiratory disease, and several other NCDs can originate years or decades before clinical diagnosis, while obesity, unhealthy dietary patterns, insufficient physical activity, tobacco exposure, and adverse socioeconomic conditions may become established during childhood.[1-3] The global increase in childhood and adolescent obesity illustrates this transition particularly clearly: more than 390 million

children and adolescents aged 5–19 years were overweight in 2022, including approximately 160 million living with obesity. [2] Adolescent obesity has increased approximately fourfold since 1990, demonstrating that childhood is increasingly a substantive component of the global NCD transition rather than merely a preparatory stage for adulthood.[2] The scientific importance of studying children consequently lies both in documenting diseases already present and in identifying the population distribution of exposures that will influence future adult morbidity.

This distinction is particularly important for Jamaica. Adult Jamaican populations have experienced substantial burdens of hypertension, diabetes, obesity, cardiovascular disease, cancer, and other chronic conditions, yet considerably less integrated scholarship has examined NCDs among children as a distinct

epidemiological population. Childhood research has more commonly focused on individual conditions such as asthma or on specific risks such as overweight and obesity, rather than developing a consolidated profile of established disease, functional health, access to care, and socioeconomic vulnerability.[3-5] Such fragmentation may unintentionally create the impression that childhood NCDs are uncommon simply because clinically diagnosed hypertension, diabetes, cancer, and cardiovascular disease occur much less frequently than in adulthood. A more appropriate interpretation distinguishes current diagnosed morbidity from future NCD risk architecture. This study conceptualises the paediatric NCD profile as the intersection of recognised disease, functional health, health-care access, socioeconomic conditions, and emerging metabolic risk.

Jamaica is also an important Caribbean case because the region is experiencing overlapping demographic, nutritional, and epidemiological transitions. Caribbean societies must address infectious diseases and childhood health needs while simultaneously responding to obesity, diabetes, cardiovascular disease, and other chronic conditions that increasingly originate in environments affecting younger populations. School food systems, sweetened beverage consumption, physical inactivity, household income, community environments, and commercial food marketing become relevant before adult disease manifests clinically. This makes childhood NCD prevention inherently multisectoral. The health sector alone cannot alter the full set of exposures through which population-level NCD risk develops. Consequently, a scholarly childhood NCD profile must connect paediatric medicine with public health, nutrition, education, poverty reduction, food policy, and life-course prevention.

Research Problem and Gap

The central research gap is not an absence of any Jamaican evidence on childhood chronic disease, but the absence of an adequately integrated interpretation of that evidence. Kahwa and colleagues conducted a nationally representative community-based study of 2,017 Jamaican children aged 2–17 years and documented substantial asthma and allergic morbidity.[4] Jamaican school-health surveillance has separately documented overweight, obesity, dietary behaviour, physical activity, and other NCD-related risks among adolescents.[3] Research examining national weight trends has likewise indicated increasing excess weight among Jamaican children and adolescents.[5] These streams of evidence, however, have largely developed in parallel. An integrated profile is needed to distinguish diseases already being reported in childhood from exposures likely to produce disease later in life.

A second gap concerns social context. The attached data indicate that Jamaican children in this analytic sample were disproportionately represented in lower socioeconomic groups: 51.0% were classified as poor, compared with 26.6% classified as wealthy. Childhood poverty may influence food security, housing conditions, environmental exposure, access to preventive services, opportunities for recreation, educational resources, and the ability of families to manage chronic illness. These pathways should not be interpreted as deterministic because poverty does not inevitably produce NCDs, but they provide plausible mechanisms through which social disadvantage can shape risk. A childhood NCD profile that reports disease without examining these circumstances would consequently provide an incomplete account of population vulnerability.

A third gap is methodological. Childhood cardiometabolic diseases are relatively uncommon compared with older adulthood, making simple disease prevalence an insensitive measure of future NCD

burden. Blood pressure, body mass index, waist measures, glucose regulation, physical activity, diet, sleep, tobacco exposure, and family history can provide risk information well before a child receives a clinical diagnosis. The supplied output contains self-reported chronic conditions but does not contain the full biomarker and behavioural architecture necessary to quantify those latent risks. Low reported diabetes or hypertension should not be equated with low future NCD risk. External Jamaican surveillance becomes essential for interpreting what the supplied data do—and do not—measure.

Aim and Objectives

The aim of this study is to develop a scholarly profile of NCDs among Jamaican children aged 0–14 years using the supplied empirical outputs and to place those findings within Jamaican, Caribbean, and global literature. Specifically, the study examines the prevalence of reported chronic conditions, evaluates functional health and health insurance, describes socioeconomic characteristics, identifies the dominant childhood disease pattern, and compares the findings with external evidence on asthma and cardiometabolic risk. It further evaluates whether apparently low prevalences of adult-type NCDs should be interpreted as evidence of a healthy childhood population. A life-course framework is used to connect present morbidity with future NCD risk. The study finally considers implications for surveillance, prevention, primary care, school health, and public policy.

Methods

Study Design and Data Source

This study employed a **secondary cross-sectional analytical design** using data from the **2023 Jamaica Survey of Living Conditions (JSLC 2023)**. The JSLC is an established household survey that collects information on the demographic, socioeconomic, health and living circumstances of Jamaicans and provides an important empirical resource for population-based social and health research. The dataset used in the present investigation was made available through the **Sir Arthur Lewis Institute of Social and Economic Studies (SALISES) Documentation Centre/Data Bank, The University of the West Indies, Mona, Jamaica, West Indies**. The present researcher was therefore not involved in the original recruitment of respondents or administration of the JSLC questionnaire but undertook secondary analysis of selected variables from the existing 2023 dataset. The statistical outputs examined in this study should consequently be understood as analytical products derived from the JSLC 2023 rather than as the primary source of the empirical observations.

Study Population

The present analysis focused principally on **Jamaican children aged 0–14 years**, with older adults providing the relevant comparative population where required by the study objectives. Application of the specified childhood age criterion to the analytical data produced a childhood cohort of **926 respondents**. The age range of 0–14 years was retained consistently throughout the analysis to ensure that the population described as children corresponded to the operational definition established for the study. Where comparisons were undertaken with older Jamaicans, the groups were treated as cross-sectional age cohorts rather than as stages through which the same respondents had been longitudinally observed. Consequently, observed differences between children and older adults represent age-group patterns within the JSLC 2023 and should not be interpreted as individual trajectories of morbidity across the life course.

The analytical childhood sample constitutes a **subsample of respondents identified within the JSLC 2023 dataset** and should not be confused with the complete JSLC 2023 survey population. This distinction is important when interpreting percentages and disease prevalence because the estimates reported in the present study relate specifically to the selected analytical population and valid observations available for individual variables. Where weighting has not been explicitly incorporated into a particular statistical analysis, estimates are appropriately described as sample-based rather than automatically characterised as weighted national prevalence estimates. National population inference requires consideration of the original JSLC sampling design and appropriate survey weights. The interpretation of the present findings therefore distinguishes carefully between characteristics of the analytical sample and estimates intended to represent the wider Jamaican child population.

Health Conditions and Operationalisation of Morbidity

The principal health variables comprised self-reported or survey-reported chronic conditions available within the JSLC 2023 health data. Conditions examined included **asthma, diabetes mellitus, hypertension, arthritis, chronic obstructive pulmonary disease (COPD), heart disease, sickle cell disease, depression, dementia, other mental disorders, cancer, epilepsy, kidney disease, and an unspecified or other illness category**. The inclusion of this range of conditions permitted the study to examine both comparatively common childhood health conditions and diseases that occur infrequently among children but may become substantially more prevalent at older ages. Disease estimates derived from the JSLC should be understood as **reported morbidity within the survey framework** rather than morbidity independently established through clinical examinations, laboratory investigations or medical-record verification. This distinction is particularly relevant to the childhood population because reporting may depend on the structure of household-level data collection and the knowledge of the person providing information about the child.

For descriptive analysis, the two affirmative disease-response categories were combined to identify respondents for whom a condition was reported either **within the preceding 12 months or more than 12 months previously**. Combining these affirmative responses generated an overall descriptive measure of reported disease prevalence for each condition. This procedure facilitated comparison of the proportion of children and, where applicable, older adults for whom each chronic condition was reported. The resulting percentages therefore represent the combined affirmative categories rather than the distribution of the original response categories separately. Such estimates should be interpreted as reported prevalence within the analytical sample and not as clinically verified disease prevalence.

An important methodological distinction was maintained between the construction of descriptive prevalence estimates and the inferential statistical tests. Although the two affirmative categories were combined for descriptive presentation, the reported **Pearson chi-square (χ^2) statistics were calculated from the original multicategory disease variables** where applicable. Consequently, a chi-square statistic associated with a particular disease should not be interpreted as though it were necessarily generated from the subsequently combined binary prevalence indicator. The descriptive prevalence measure and multicategory inferential analysis represent related but statistically distinct representations of the underlying JSLC 2023 responses. Preserving this distinction prevents inappropriate correspondence between a reconstructed prevalence percentage and an inferential statistic generated from

a differently categorised variable.

Statistical Analysis

Descriptive statistics, including **frequencies and percentages**, were used to summarise the distribution of chronic conditions and other characteristics of the analytical population. Bivariate associations between categorical variables were assessed using **Pearson's chi-square test of independence**, while **Cramer's V** was used, where available, to assess the magnitude of the association. Statistical significance was evaluated principally at **$p < .05$** . However, statistical significance was not considered sufficient evidence of epidemiological or substantive importance. Interpretation therefore considered the magnitude of observed differences, effect sizes, sample distributions and the frequency with which individual health outcomes occurred.

Particular caution was exercised when interpreting inferential statistics for uncommon childhood diseases. Several disease-specific contingency tables contained small expected cell frequencies, thereby weakening the conventional approximation underlying Pearson's χ^2 test. In the COPD analysis, for example, **75% of cells had expected frequencies below five**, indicating a substantial violation of the conventional expected-frequency criterion. Under such circumstances, a statistically significant or non-significant χ^2 result may be unstable and should not be accorded the same inferential weight as findings based on adequately populated contingency-table cells. Rare conditions were therefore retained for descriptive completeness, but conclusions regarding statistical associations involving these conditions were deliberately conservative.

This consideration is particularly important in an analysis of children because several chronic conditions included in the JSLC health module are expected to occur relatively infrequently in younger populations. A very low prevalence may produce small numbers of affected children even when the overall childhood analytical sample is reasonably large. Consequently, percentages based on very small numerators can fluctuate substantially and should not be overinterpreted as precise population estimates. Conversely, the rarity of a condition should not be interpreted as evidence that the disease lacks clinical or public-health importance. Statistical frequency, statistical significance and clinical importance were therefore treated as conceptually distinct considerations throughout the analysis.

Comparison with Existing Literature

The empirical findings were interpreted in relation to relevant Jamaican, Caribbean and international literature on childhood morbidity, chronic disease and life-course differences in health. Comparisons with published studies were **narrative and contextual rather than meta-analytic**, because studies frequently differed in age definitions, survey periods, sampling strategies, diagnostic criteria, questionnaire wording and methods of disease ascertainment. Direct numerical comparisons were therefore made cautiously, particularly when an external study employed clinically diagnosed disease while the JSLC relied on survey-reported information. A higher or lower prevalence reported in another study was not automatically interpreted as evidence of a genuine epidemiological difference. Instead, consideration was given to whether differences in study design and measurement could plausibly account for the observed variation.

Where nationally representative Jamaican or international estimates were available in the literature, these were used to contextualise rather than replace the empirical JSLC 2023 findings.

Similarly, differences between children and older adults in the present analysis were not interpreted as longitudinal changes occurring within individuals. The cross-sectional design captures different age cohorts at one survey period and therefore cannot distinguish biological ageing effects from cohort, socioeconomic, healthcare-access, diagnostic or other contextual influences. Consequently, the observed age differences are appropriately described as **cross-sectional age-associated patterns**. No causal inference was made from the observed statistical associations.

Data Access, Reporting and Ethical Considerations

The dataset analysed in this study was obtained as an existing secondary dataset made available through the **SALISES Documentation Centre/Data Bank at The University of the West Indies, Mona, Jamaica, West Indies**. The present investigator did not directly recruit, interview or otherwise interact with the children, older adults or other household members whose information formed part of the JSLC 2023. The analysis was therefore restricted to information already contained in the available dataset. Reporting was undertaken at an aggregate statistical level, with findings presented as frequencies, percentages and measures of association rather than as information capable of identifying individual respondents. The secondary nature of the investigation should be clearly distinguished from the ethical and fieldwork procedures governing the original JSLC 2023 data collection.

For journal submission, ethical reporting should therefore identify the study explicitly as a **secondary analysis of the JSLC 2023** and state the mechanism through which the dataset was accessed. Where required by the target journal, additional information concerning the original JSLC sampling design, data-collection procedures, survey weighting, informed-consent procedures and institutional oversight should be obtained from the relevant official JSLC documentation rather than inferred from the analytical output. Similarly, the precise mechanism through which health information for children was reported should be described according to the original survey documentation. This is especially important because health information concerning younger children may depend on household or proxy reporting rather than direct self-report. The manuscript should consequently use the broader term **“reported morbidity”** for children unless the JSLC documentation establishes that the particular responses were obtained directly from the children themselves.

Methodological Considerations

Several limitations inherent in secondary cross-sectional survey analysis were considered when interpreting the findings. First, the design does not permit determination of temporal sequence or causal relationships between age and the observed health outcomes. Second, reported chronic conditions may be influenced by respondents' or household informants' knowledge of existing diagnoses, recall, healthcare access and previous contact with medical professionals. Third, the absence of a reported condition does not necessarily demonstrate the clinical absence of disease because undiagnosed morbidity may remain unidentified in household surveys. Fourth, uncommon diseases generated sparse contingency-table cells in some analyses, limiting the robustness of conventional chi-square inference. Finally, comparisons with external studies remain sensitive to differences in sampling,

measurement and disease definitions.

Notwithstanding these limitations, the **JSLC 2023 provides a valuable empirical basis for examining morbidity among Jamaican children and comparing their health profile with substantially older segments of the population**. Its broader household and socioeconomic orientation enable childhood health to be interpreted within the social circumstances in which Jamaican children live rather than as an exclusively biomedical phenomenon. The use of a common survey source for the age cohorts also reduces some of the methodological heterogeneity that would arise if childhood and older-adult estimates were obtained from entirely different surveys. The study therefore provides a useful cross-sectional representation of the distribution of reported chronic morbidity across selected stages of the Jamaican life course. All conclusions are nevertheless restricted to associations and descriptive patterns that can reasonably be supported by the JSLC 2023 data and the analytical procedures employed.

Results

Sociodemographic and Geographic Profile of Jamaican Children

Table 1 presents the sociodemographic and geographic characteristics of the 926 Jamaican children aged 0–14 years included in the analysis. The sex distribution shows a modest predominance of males, with 498 (53.8%) compared with 428 females (46.2%). Geographically, the largest proportion of children resided in rural areas (42.3%), while 29.0% lived in the Greater Kingston Metropolitan Area and 28.6% in other urban centres. Table 1 indicates that 57.7% of the children collectively resided in urban settings, although rural children constituted the largest single residential category. The socioeconomic distribution was weighted towards children from poorer households, with 51.0% classified as poor (Quintiles 1 and 2), compared with 22.5% in the middle socioeconomic group (Quintile 3) and 26.6% in the wealthy group (Quintiles 4 and 5). Consequently, Table 1 reveals an important socioeconomic characteristic of the sample, as approximately one-half of Jamaican children represented in the dataset belonged to the two lowest socioeconomic quintiles.

There was also considerable geographic variation across Jamaica's 14 parishes. As shown in Table 1, St Catherine accounted for the largest proportion of children (18.6%), followed closely by St Andrew (17.7%), while Clarendon represented a further 12.0%; collectively, these three parishes accounted for 48.3% of the sample. St James was the next most represented parish (8.3%), whereas St Thomas had the smallest proportion (2.7%), followed by Kingston (3.6%) and Trelawny (3.8%). Educational-level information was available for only 71 children (7.7% of the sample), of whom 67 (94.4% of valid responses) were classified as having primary education or below and four (5.6%) as having secondary education; consequently, this variable requires cautious interpretation because 92.3% of observations were missing. Union status was unavailable for all 926 children, while none was classified as a household head. Table 1 establishes a geographically diverse but socioeconomically disadvantaged childhood population as the demographic foundation for the subsequent examination of health and NCD characteristics.

Table 1: Sociodemographic and Geographic Characteristics of Jamaican Children Aged 0–14 Years (N = 926)

Characteristic	Category	Frequency (n)	Per cent (%)	Valid Per cent (%)
Sex	Male	498	53.8	53.8
	Female	428	46.2	46.2
	Total	926	100.0	100.0
Area of residence	Greater Kingston Metropolitan Area	269	29.0	29.0
	Other Urban Centres	265	28.6	28.6
	Rural	392	42.3	42.3
	Total	926	100.0	100.0
Union status	Missing/System	926	100.0	—
Educational level	Primary and below	67	7.2	94.4
	Secondary	4	0.4	5.6
	Missing/System	855	92.3	—
Head of household	No (.00)	926	100.0	100.0
Age cohort	Children: 0–14 years	926	100.0	100.0
Socioeconomic group	Poor (Quintiles 1 & 2)	472	51.0	51.0
	Middle (Quintile 3)	208	22.5	22.5
	Wealthy (Quintiles 4 & 5)	246	26.6	26.6
	Total	926	100.0	100.0
Parish	Kingston	33	3.6	3.6
	St Andrew	164	17.7	17.7
	St Thomas	25	2.7	2.7
	Portland	43	4.6	4.6
	St Mary	44	4.8	4.8
	St Ann	38	4.1	4.1
	Trelawny	35	3.8	3.8
	St James	77	8.3	8.3
	Hanover	42	4.5	4.5
	Westmoreland	42	4.5	4.5
	St Elizabeth	50	5.4	5.4
	Manchester	50	5.4	5.4
	Clarendon	111	12.0	12.0
	St Catherine	172	18.6	18.6
	Total	926	100.0	100.0

Health Insurance Coverage and Functional Health

Table 2 demonstrates a substantial health-insurance coverage gap among Jamaican children. Of the 926 children, 797 (86.1%) were uninsured, whereas only 129 (13.9%) had health insurance. Thus, fewer than one in seven children in the sample had reported health-insurance coverage. This imbalance is an important component of the childhood health profile because insurance status represents a dimension of financial protection that is analytically distinct from whether a child was currently ill. The descriptive evidence cannot establish that uninsured children necessarily experienced poorer access to healthcare, delayed diagnosis, or inferior treatment, since such relationships require inferential investigation. Nevertheless, Table 2 identifies limited formal health-insurance coverage as one of the most prominent health-system characteristics of the childhood sample.

Functional health was generally favourable among children for whom valid information was available. Table 2 shows that, among the 681 valid observations, 654 children (96.0%) had no difficulty, 20 (2.9%) experienced some difficulty, five (0.7%) experienced a lot of difficulty, and two (0.3%) could not perform the relevant function at all. 27 children, representing approximately 4.0% of valid observations, experienced at least some degree of functional limitation. However, functional-health information was missing for 245 children, equivalent to 26.5% of the total sample. This degree of missingness means that the favourable functional-health distribution observed among valid cases cannot automatically be generalised to all 926 children. Table 2 consequently reveals both predominantly favourable functioning among observed cases and a small but important subgroup of children experiencing functional limitations.

Table 2: Health Insurance Coverage and Functional Health Among Jamaican Children Aged 0–14 Years

Health characteristic	Category	Frequency (n)	Per cent (%)	Valid Per cent (%)
Health insurance	Uninsured	797	86.1	86.1
	Insured	129	13.9	13.9
	Total	926	100.0	100.0
Functional health	No difficulty	654	70.6	96.0
	Some difficulty	20	2.2	2.9
	A lot of difficulty	5	0.5	0.7
	Cannot do at all	2	0.2	0.3
	Valid total	681	73.5	100.0
	Missing/System	245	26.5	—
	Total	926	100.0	—

Injury and General Illness Experience

Table 3 demonstrates a low reported occurrence of injury requiring medical attention among Jamaican children. Only five children (0.5%) experienced such an injury, whereas 921 (99.5%) did not. Similarly, 884 children (95.5%) reportedly had no illness other than that due to injury. Among the remaining children, seven (0.8%) reported chronic illness, 33 (3.6%) reported another illness, and two (0.2%) reported both chronic and other illness. Consequently, only 42 children, or 4.5% of the sample, were classified as experiencing some form of illness through this general measure. Table 3 portrays an apparently favourable general morbidity profile, characterised by low reported levels of medically consequential injury and general illness.

Nevertheless, Table 3 should not be interpreted as demonstrating that 95.5% of the children were entirely free of chronic disease. The disease-specific measures provide information that is conceptually different from the broader question concerning whether the child had an illness. This distinction is particularly apparent for asthma, for which 56 children had a reported disease history, exceeding the 42 children classified under the general illness measure as having chronic illness, another illness, or both. Accordingly, absence of reported general illness should not be equated automatically with absence of a disease-specific history. Table 3 needs to be interpreted in conjunction with Table 4, which provides a more detailed account of specific chronic diseases and conditions.

Table 3: Injury and General Illness Experience Among Jamaican Children Aged 0–14 Years

Health characteristic	Category	Frequency (n)	Per cent (%)
Injury requiring medical attention	Yes	5	0.5
	No	921	99.5
	Total	926	100.0
Illness other than injury	Yes, chronic illness	7	0.8
	Yes, other illness	33	3.6
	Yes, both	2	0.2
	No	884	95.5
	Total	926	100.0
	Missing/System	245	26.5
	Total	926	100.0

Physical Non-Communicable Diseases and Selected Chronic Conditions

Table 4 reveals considerable variation in the reported frequencies of specific chronic conditions, with asthma clearly constituting the dominant measured NCD. Fifteen children (1.6%) had asthma reported within the preceding 12 months, and 41 (4.4%) had asthma reported more than 12 months previously, producing a combined reported history of 56 children (6.0%). By comparison, diabetes and hypertension were each reported for only two children (0.2%), while arthritis was reported for one child (0.1%). No confirmed COPD case was recorded, although two respondents indicated that they did not know the child's COPD status. Heart disease was reported for three children (0.3%), while sickle cell disease occurred among two (0.2%). Table 4 consequently demonstrates that the measured childhood chronic-disease profile was strongly concentrated around asthma rather than being distributed uniformly across the physical NCDs investigated.

Other comparatively uncommon but potentially serious conditions were also identified in Table 4. Cancer was recorded for one child (0.1%), and the cancer-type variable identified the condition as nasopharyngeal. Epilepsy was reported for five children (0.5%), comprising two reports within the preceding 12 months and three more than 12 months previously, while no confirmed kidney-disease case was reported. Importantly, the categories referring to disease within or more than 12 months previously should not automatically be interpreted as distinguishing active disease from resolved disease, particularly for inherently chronic conditions. Rather, these categories represent the temporal classifications contained in the JSLC output. Table 4 depicts a heterogeneous childhood morbidity spectrum in which asthma predominated alongside relatively small numbers of children with other chronic, cardiovascular,

haematological, neurological, oncological, and renal conditions.

Table 4: Physical Non-Communicable Diseases and Selected Chronic Conditions Among Jamaican Children Aged 0–14 Years

Condition	In last 12 months, n (%)	More than 12 months ago, n (%)	Combined reported history, n (%)	No, n (%)	Other response, n (%)
Asthma	15 (1.6)	41 (4.4)	56 (6.0)	869 (93.8)	1 (0.1) no response
Diabetes	1 (0.1)	1 (0.1)	2 (0.2)	924 (99.8)	—
Hypertension	1 (0.1)	1 (0.1)	2 (0.2)	923 (99.7)	1 (0.1) don't know
Arthritis	0	1 (0.1)	1 (0.1)	924 (99.8)	1 (0.1) don't know
COPD	0	0	0 (0.0)	924 (99.8)	2 (0.2) don't know
Heart disease	0	3 (0.3)	3 (0.3)	923 (99.7)	—
Sickle cell disease	0	2 (0.2)	2 (0.2)	924 (99.8)	—
Cancer	0	1 (0.1)	1 (0.1)	925 (99.9)	—
Epilepsy	2 (0.2)	3 (0.3)	5 (0.5)	921 (99.5)	—
Kidney disease	0	0	0 (0.0)	924 (99.8)	2 (0.2) don't know

Mental and Neurocognitive Conditions

Table 5 indicates that explicitly recorded mental and neurocognitive conditions were uncommon among Jamaican children in the sample. Depression was reported for one child (0.1%), with the observation classified as more than 12 months previously. Dementia was likewise recorded for one child (0.1%) in the more-than-12-month category. Four children (0.4%) were reported as having another mental disorder, comprising one case within the preceding 12 months and three more than 12 months previously. Correspondingly, 922 children (99.6%) had no reported condition within the broader category of another mental disorder. Table 5 demonstrates substantially lower recorded frequencies of these mental and neurocognitive conditions than the frequency observed for asthma.

Considerable caution is nevertheless required when interpreting Table 5 because these variables represent conditions recorded through the household survey rather than prevalence estimates independently established through clinical psychiatric or neurological assessment. The single dementia observation is especially unusual within a population restricted to children aged 0–14 years and should be reported transparently without assuming that it represents an independently verified paediatric dementia diagnosis. Similarly, the low frequencies of depression and other mental disorders cannot establish that the underlying mental-health burden among Jamaican children is correspondingly low. The available descriptive output cannot distinguish genuinely low prevalence from differences in diagnosis, recognition, proxy knowledge, healthcare contact, or reporting. Table 5 should be regarded as representing **reported mental and neurocognitive morbidity captured by the JSLC variables**, rather than a comprehensive estimate of clinically established childhood mental-health disorders.

Table 5: Mental and Neurocognitive Conditions Among Jamaican Children Aged 0–14 Years

Condition	In last 12 months, n (%)	More than 12 months ago, n (%)	Combined reported history, n (%)	No, n (%)
Depression	0	1 (0.1)	1 (0.1)	925 (99.9)
Dementia	0	1 (0.1)	1 (0.1)	925 (99.9)
Any other mental disorder	1 (0.1)	3 (0.3)	4 (0.4)	922 (99.6)

Overall NCD Profile of Jamaican Children

Taken collectively, Tables 1–5 reveal a more complex childhood health profile than would be suggested by the general illness measure alone. Most children were not reported as experiencing an illness, 99.5% had no reported injury requiring medical attention, and 96.0% of those with valid functional-health information had no functional difficulty. Nevertheless, disease-specific questioning identified a measurable chronic-disease burden dominated by asthma, which had a combined reported history of 6.0%. Other measured conditions occurred considerably less frequently, including epilepsy (0.5%), heart disease (0.3%), diabetes (0.2%), hypertension (0.2%), sickle cell disease (0.2%), arthritis (0.1%), and cancer (0.1%). Mental and neurocognitive conditions were similarly infrequently recorded, although these estimates describe reported morbidity rather than prevalence established through independent clinical assessment. The collective findings indicate that the childhood NCD profile in this sample was characterised principally by **asthma alongside a smaller and heterogeneous group of comparatively uncommon chronic, neurological, cardiovascular, haematological, oncological, and mental-health conditions**.

The findings further demonstrate why childhood health should not be evaluated solely according to the presence or absence of a reported disease. Table 1 shows that 51.0% of the children belonged to the poorest two socioeconomic quintiles, while Table 2 indicates that 86.1% lacked health-insurance coverage. Among children with valid functional-health information, 27 experienced at least some functional difficulty, including seven experiencing either substantial difficulty or an inability to perform the measured function. These socioeconomic, healthcare-protection, functional, and morbidity dimensions collectively provide a broader representation of childhood health than any single disease indicator. Although these descriptive findings cannot establish causal relationships, they provide an empirical foundation for subsequent inferential analyses examining whether childhood NCDs and functional limitations vary according to sex, socioeconomic position, area of residence, parish, and insurance status. Accordingly, Tables 1–5 establish a coherent descriptive epidemiological foundation for the scholarly examination of the **NCD profile of Jamaican children aged 0–14 years**.

Comparison With Jamaican Literature

The 6.0% reported asthma prevalence in the supplied childhood output requires careful comparison with previous Jamaican research. Kahwa and colleagues examined a representative community sample of 2,017 Jamaican children aged 2–17 years and reported doctor-diagnosed asthma in 16.7%, current wheeze in 19.6%, and severe asthma symptoms in approximately 5.5%.[4] Their study used a structured asthma and allergy instrument and a stratified multistage sampling design, making it methodologically different from the present general chronic-disease output.[4] Consequently, the lower 6.0% figure observed here should **not** be described as evidence that Jamaican childhood asthma has declined. Differences in age ranges, diagnostic definition, questionnaire specificity, reporting, field period, and sampling could readily account for substantial variation.

This comparison is scientifically valuable precisely because it demonstrates how general health surveys can underestimate conditions when condition-specific instruments identify symptoms beyond previously diagnosed disease. Asthma may exist without a formal diagnosis, and episodic symptoms can be missed if parents or respondents interpret questions narrowly. Conversely, physician diagnosis and symptom-based prevalence are not identical constructs. A rigorous national paediatric NCD surveillance system should retain both general chronic-disease modules and disease-specific measures when feasible. The finding does not invalidate the supplied 6.0%; it clarifies what that value is likely to represent. It is best interpreted as reported asthma within this particular analytic framework rather than the definitive prevalence of childhood asthma in Jamaica.

The most consequential Jamaican comparison concerns obesity. In the 2017 Global School-based Student Health Survey, 23.3% of school-going adolescents aged 13–17 years were overweight, and 9.2% were obese; overweight was estimated at 26.4% among girls and 20.0% among boys.[3] A separate review of Jamaican weight trends reported that overweight/obesity among children and adolescents aged 10–19 years increased from approximately 5.0% in 2000 to 11.4% in 2016 within the series examined [5]. Although those sources use different populations and metrics, they converge on the conclusion that excess adiposity is an established paediatric NCD concern in Jamaica. This evidence fundamentally changes interpretation of the 0.2% childhood diabetes and hypertension values in the supplied output: low current diagnosed disease coexists with substantial upstream metabolic exposure.

Caribbean and Global Comparison

Jamaica's childhood profile reflects a wider global transformation in which obesity and associated metabolic risks are shifting towards younger ages. WHO estimates indicate that more than 390 million persons aged 5–19 years were overweight in 2022 and approximately 160 million were living with obesity.[2] The global prevalence of overweight among this age group increased from approximately 8% in 1990 to 20% in 2022, while obesity increased from about 2% to 8%.[2] These changes mean that the absence of large numbers of children with diagnosed cardiovascular disease does not indicate the absence of a paediatric NCD epidemic. The epidemic may be manifest primarily through adiposity, metabolic risk, respiratory disease, dietary exposures, inactivity, and psychosocial consequences before mature adult disease appears. Jamaica should be compared internationally using both childhood diseases and childhood risk factors.

Asthma provides a different comparative pattern. Kahwa and colleagues concluded that Jamaican childhood asthma and allergic

disease represented a substantial public-health problem and used Caribbean comparators in interpreting the prevalence observed.[4] Respiratory morbidity in Caribbean children must be understood within climatic conditions, allergen exposure, housing quality, air quality, second-hand smoke, infection histories, and health-care access rather than through a purely genetic explanation. The 6.0% figure in the present output consequently represents a clinically important disease even though it is far below adult hypertension prevalence. Asthma can disrupt sleep, school attendance, physical activity, family functioning, and emergency health-service use. A childhood NCD strategy that concentrates exclusively on obesity would also be incomplete.

Discussion

The findings of this study reveal a childhood non-communicable disease (NCD) profile in Jamaica that is simultaneously reassuring and concerning, depending on whether health is evaluated through established disease or through a life-course perspective on future risk. Among children aged 0–14 years, reported diabetes and hypertension were each only 0.2%, heart disease was 0.3%, cancer and arthritis were 0.1% each, and no confirmed cases of chronic obstructive pulmonary disease or kidney disease were recorded. In contrast, asthma emerged as the dominant chronic condition, with a combined reported history of 6.0%, while epilepsy, sickle cell disease, and selected mental-health conditions constituted smaller but clinically important components of childhood morbidity. These findings indicate that the NCD burden among Jamaican children should not be conceptualised simply as an early version of the adult Jamaican disease profile, which is dominated more strongly by cardiometabolic disorders. Rather, childhood appears to be characterised by a comparatively visible respiratory burden, low levels of reported established cardiometabolic disease, and a potentially much larger reservoir of future cardiometabolic risk that cannot adequately be captured through diagnosed disease alone [1-3,6-8]. This distinction between **manifest childhood NCD morbidity** and **latent life-course NCD risk** represents a central interpretation of the present findings.

The predominance of asthma is consistent with earlier Jamaican research demonstrating that respiratory morbidity constitutes an important component of childhood chronic disease. Kahwa et al reported doctor-diagnosed asthma among 16.7% of Jamaican children aged 2–17 years, while 19.6% experienced current wheeze and approximately 5.5% reported severe asthma symptoms.[4] The 6.0% reported asthma history identified in the present study is substantially lower than the doctor-diagnosed prevalence reported by Kahwa et al, but this difference should not be interpreted as evidence of a decline in Jamaican childhood asthma. The studies differ in age composition, survey design, disease definition, symptom ascertainment, sampling procedures, and the specificity with which respiratory morbidity was investigated. [4] A condition-specific asthma instrument is inherently more capable of identifying wheezing and respiratory symptoms than a general household chronic-disease questionnaire, particularly where children experience symptoms without a formal diagnosis. Consequently, the present findings support the broader conclusion of Kahwa et al that asthma remains epidemiologically important among Jamaican children while simultaneously demonstrating how prevalence estimates may vary substantially according to measurement strategy [4].

The discrepancy between the present asthma estimate and earlier Jamaican findings further highlights the distinction between diagnosed disease, reported disease history, and symptom-defined morbidity. Children experiencing recurrent wheeze,

exercise-induced respiratory symptoms, nocturnal cough, or other manifestations compatible with asthma may not necessarily have received or retained a formal clinical diagnosis, while caregivers responding to household surveys may interpret disease questions differently from respondents completing condition-specific instruments [4]. Conversely, symptom-based measures may identify respiratory manifestations that do not ultimately satisfy clinical diagnostic criteria for asthma. Neither approach should automatically be regarded as the definitive measure against which the other is judged. Instead, differences between estimates demonstrate the importance of triangulating physician diagnosis, symptom surveillance, medication use, healthcare utilisation, and household reporting when estimating childhood respiratory morbidity. This methodological issue may be especially important where differences in access to healthcare influence whether underlying morbidity becomes formally diagnosed. The comparatively modest asthma prevalence observed in the present study should consequently be interpreted as the burden captured through the available survey instrument rather than as a definitive estimate of the total underlying respiratory burden among Jamaican children.

In contrast to asthma, the extremely low reported prevalence of diabetes and hypertension might initially suggest that cardiometabolic NCDs are currently of limited importance among Jamaican children. This interpretation receives some support from the natural history of these diseases, because clinically established hypertension, type 2 diabetes, and cardiovascular disease remain considerably less common during childhood than during later adulthood. Nevertheless, global evidence challenges the assumption that paediatric hypertension is exceptionally rare. A systematic review and meta-analysis estimated a pooled childhood hypertension prevalence of approximately 4%, although prevalence varied substantially according to age, adiposity, measurement procedures, and diagnostic criteria.[6] More recent global evidence similarly demonstrates that sustained paediatric hypertension is substantially more common among children with overweight and obesity than among those with normal weight.[7] These findings provide an important comparator for the 0.2% reported hypertension prevalence in the present study and suggest that household-reported diagnosed hypertension and objectively measured paediatric blood pressure abnormalities represent substantially different epidemiological constructs. The Jamaican estimate should consequently not be interpreted as excluding a larger burden of undetected elevated blood pressure.

The apparent reassurance provided by low diagnosed cardiometabolic morbidity is challenged even more strongly by Jamaican evidence concerning childhood and adolescent adiposity. The 2017 Global School-based Student Health Survey reported that 23.3% of Jamaican school-going adolescents aged 13–17 years were overweight and 9.2% were obese, with overweight affecting 26.4% of girls and 20.0% of boys.[3] Chambers et al similarly documented the increasing importance of overweight and obesity in Jamaica and demonstrated that excess body weight has become an established population-health concern rather than an isolated clinical phenomenon.[5] International evidence further demonstrates that obesity among children and adolescents is associated with hypertension and other cardiometabolic abnormalities.[6–9] The coexistence of low reported childhood hypertension and diabetes with substantial adolescent overweight and obesity illustrates an important epidemiological distinction between **currently diagnosed disease and underlying cardiometabolic risk**. The present findings should consequently

not be interpreted as indicating that Jamaican children are insulated from the processes contributing to the country's later adult burden of hypertension, diabetes, and cardiovascular disease.

This interpretation is reinforced by longitudinal evidence linking childhood and life-course adiposity trajectories with adult cardiovascular outcomes. Systematic-review evidence demonstrates that persistently elevated body mass index from childhood into adulthood is associated with substantially increased risks of adult hypertension and type 2 diabetes.[8,10] Kibret et al found that individuals who remained overweight from childhood into adulthood had more than twice the risk of hypertension and more than four times the risk of type 2 diabetes compared with individuals maintaining a normal BMI trajectory.[8] Such evidence strengthens the biological plausibility of interpreting childhood overweight and obesity as part of the antecedent architecture of adult NCDs rather than as an isolated paediatric nutritional issue. Cardiovascular risk factors established during childhood, including adiposity, blood pressure, and abnormal lipid profiles, may track into adulthood and contribute to subsequent subclinical and clinical cardiovascular disease [8,11]. Accordingly, the very low prevalence of reported hypertension and diabetes in the present Jamaican sample should not obscure the preventive importance of childhood cardiometabolic health.

However, the relationship between childhood adiposity and adult disease is neither inevitable nor biologically deterministic. This constitutes an important contrary finding within the international literature. Sun et al, in a systematic review examining weight change from childhood to adulthood, found that individuals with excess weight during childhood who subsequently achieved normal weight in adulthood generally did not demonstrate the same elevation in adult cardiovascular risk factors as individuals whose excess weight persisted.[10] Thus, childhood overweight or obesity should not be treated as an irreversible trajectory towards hypertension, diabetes, or cardiovascular disease. Rather, the evidence indicates both increased risk and substantial potential for risk modification.[8,10] This qualification is especially important because deterministic interpretations may stigmatise children and families while understating the potential effectiveness of prevention. The Jamaican childhood obesity problem should be conceptualised as an opportunity for early intervention rather than as a predetermined forecast of adult disease.

The apparently favourable general health profile observed in the present study requires similar qualification. Approximately 95.5% of children were classified as having no illness other than injury, 99.5% reported no injury requiring medical attention, and 96.0% of children with valid functional-health information had no functional difficulty. Taken literally, these estimates portray Jamaican childhood as overwhelmingly healthy. However, disease-specific questioning identified 56 children with a reported history of asthma alone, exceeding the 42 children classified by the general illness variable as having chronic illness, another illness, or both. This discrepancy demonstrates that a general question concerning recent or recognised illness does not necessarily capture the same construct as disease-specific history. A child may be functioning normally, attending school, and not perceived as currently ill while nevertheless living with an episodic or controlled chronic condition. The findings consequently challenge any assumption that absence of reported current illness is equivalent to absence of chronic morbidity.

The functional-health findings nevertheless provide an important counterbalance to an exclusively disease-centred interpretation.

Among children with valid information, 96.0% reportedly experienced no functional difficulty, while approximately 4.0% had at least some limitation. This suggests that most children represented in the valid observations were functioning relatively well despite the chronic conditions identified within the broader sample. Such a finding is compatible with the episodic nature of conditions such as asthma, where children may function normally between exacerbations, particularly when disease is adequately controlled.[4] However, functional-health information was missing for 26.5% of the childhood sample, preventing the observed distribution from being assumed to characterise all 926 children. Moreover, broad functional measures may fail to capture condition-specific consequences such as sleep disruption, reduced participation in physical activity, school absenteeism, impaired concentration, caregiver burden, or episodic emergency healthcare utilisation. Functional health should complement rather than replace disease-specific and quality-of-life measures in future Jamaican paediatric surveillance.

The socioeconomic composition of the sample adds another critical dimension to interpretation. More than half of the children—51.0%—were located within the two poorest socioeconomic quintiles, whereas 26.6% were classified within the two wealthiest quintiles. These findings do not demonstrate that poverty caused childhood NCDs, nor do they establish that poorer children had a higher disease prevalence because the necessary condition-specific multivariable analyses were not available. Nevertheless, socioeconomic circumstances may influence childhood health through multiple pathways, including household food security, housing quality, exposure to environmental hazards, recreational opportunities, transportation, parental resources, access to health information, and capacity to absorb the direct and indirect costs associated with chronic illness.[1,12] Socioeconomic disadvantage may also interact with commercial determinants of health by shaping access to affordable nutritious foods and opportunities for safe physical activity.[1,2] The concentration of children within lower socioeconomic groups identifies an important structural context within which the observed morbidity profile should be interpreted. Future Jamaican research should move beyond descriptive socioeconomic classification and determine whether childhood NCD prevalence, risk exposure, disease recognition, treatment, and functional consequences vary systematically across socioeconomic groups.

Health-insurance coverage reinforces this concern because 86.1% of children in the study were uninsured, leaving only 13.9% with reported insurance coverage. This is one of the most striking descriptive findings, although its interpretation requires recognition of Jamaica's public healthcare system. Lack of private or formal insurance does not necessarily mean absence of access to healthcare, because uninsured children may receive services through public-sector facilities. It would be inappropriate to infer directly that 86.1% of children were unable to obtain necessary healthcare. Nevertheless, insurance and household resources may influence the range, timing, continuity, convenience, and private-sector availability of services accessible to families, particularly where chronic illness requires repeated consultations, diagnostic investigations, specialist assessment, or medication. The coexistence of limited insurance coverage and substantial socioeconomic disadvantage consequently raises an empirical question about whether financial circumstances influence disease recognition and management. This question should be tested directly rather than inferred from descriptive associations. The findings consequently introduce a broader epidemiological distinction between **disease prevalence and diagnosed or**

reported disease prevalence. Household surveys identify chronic conditions only when disease has been recognised, remembered, understood, and reported by respondents unless objective measurements are incorporated. Children with elevated blood pressure, impaired glucose regulation, dyslipidaemia, obesity, psychological distress, or respiratory symptoms may remain outside disease-prevalence estimates if they have not received appropriate screening or diagnosis.[6,7,9] This issue is particularly important for paediatric hypertension because elevated blood pressure may be asymptomatic and diagnosis requires appropriate measurement and confirmation rather than reliance on household recognition.[6,7] Recent meta-analytic evidence estimates global sustained paediatric hypertension at approximately 3.9%, while prevalence is markedly greater among children and adolescents with overweight and obesity.[7] Such estimates cannot be applied directly to Jamaica, but they demonstrate why the 0.2% self-reported prevalence identified in this study should not be regarded as equivalent to objectively measured population prevalence.

The mental-health findings raise comparable concerns about under-recognition. Depression was reported for only one child (0.1%), while another mental disorder was reported for four children (0.4%). These estimates should not be interpreted as demonstrating that clinically meaningful psychological distress, anxiety, behavioural disorders, depressive symptoms, or other mental-health difficulties are virtually absent among Jamaican children. Mental-health conditions may be particularly vulnerable to under-recognition because symptoms can be concealed, normalised, attributed to behaviour or educational performance, or remain undiagnosed where specialist assessment is unavailable. [13,14] Proxy reporting by adults may additionally fail to capture internalising symptoms experienced by children themselves. Consequently, the present estimates represent mental-health diagnoses or conditions captured through the household-survey variables rather than a comprehensive psychiatric assessment. Future Jamaican childhood-health research should incorporate validated, developmentally appropriate psychological and behavioural screening instruments alongside questions concerning formally diagnosed disorders.

The single reported dementia observation among children aged 0–14 years also warrants methodological rather than conventional epidemiological interpretation. Paediatric neurodegenerative conditions exist, but dementia terminology is overwhelmingly associated with adult and older populations, making a household-reported childhood dementia observation unusual. The present analysis appropriately retains the observation because deleting an unexpected response without independent evidence would alter the supplied dataset. Nevertheless, it could reflect an uncommon clinical condition, respondent misunderstanding, coding error, diagnostic misclassification, or application of an adult-oriented disease category to a childhood respondent. It should not be interpreted as establishing a measurable prevalence of conventional dementia among Jamaican children. Instead, the observation illustrates one limitation that can arise when survey instruments containing predominantly adult-oriented chronic-disease categories are applied across the entire age distribution. Developmentally sensitive disease modules would improve the validity and interpretability of future national surveillance.

More broadly, these findings expose the limitations of transferring an adult NCD surveillance model directly to paediatric populations. Adult NCD surveillance appropriately emphasises established hypertension, diabetes, cardiovascular disease, cancer, and chronic respiratory disease because these conditions account for

substantial adult morbidity and mortality.[1] Among children, however, the epidemiological signal may appear considerably earlier as asthma, excess adiposity, elevated but undiagnosed blood pressure, dietary exposure, insufficient physical activity, sleep disturbance, psychological distress, and metabolic abnormalities rather than clinically established cardiovascular disease.[2,6-9,11] A surveillance system that asks children primarily whether they have diseases common in adulthood may conclude correctly that established disease is uncommon while simultaneously underestimating the future public-health burden. This distinction has important policy implications because prevention is most useful before risk factors have progressed to irreversible disease. Developmentally appropriate childhood NCD surveillance should consequently measure recognised disease and antecedent risk simultaneously.

The global childhood hypertension literature provides a particularly instructive example. Earlier systematic review evidence estimated hypertension prevalence at approximately 4% among children and adolescents when appropriate repeated blood-pressure measurements were considered.[6] More recent meta-analysis similarly estimates sustained hypertension at approximately 3.9%, with substantially greater prevalence among children with overweight and obesity.[7] These values are many times higher than the 0.2% reported hypertension prevalence identified in the present study. The discrepancy does not establish that hypertension is being systematically missed among Jamaican children because the international estimates arise from heterogeneous populations and cannot be transferred directly to Jamaica. It does, however, demonstrate that prevalence depends fundamentally on ascertainment methodology. Future Jamaican surveys incorporating standardised paediatric blood-pressure measurement could determine whether household reporting substantially underestimates underlying hypertension.

This developmental perspective also explains why the Jamaican findings are not inherently contradictory. On the surface, a population in which 95.5% of children report no general illness, 96.0% of valid respondents have no functional limitation, diabetes and hypertension each affect only 0.2%, and heart disease affects 0.3% appears epidemiologically healthy. Yet the same national context contains measurable childhood asthma and independent evidence of substantial adolescent overweight and obesity [3-5]. These findings coexist because different indicators capture different points along the disease continuum. Current functioning measures immediate capability; reported disease history captures recognised morbidity; obesity represents an important intermediate risk state; and later adult NCD incidence represents a downstream outcome that may emerge decades afterwards [8,10,11]. The apparent contradiction diminishes when the findings are interpreted across the life course rather than within a single cross-sectional moment. Childhood may simultaneously be characterised by low established cardiometabolic morbidity and substantial accumulation of future cardiometabolic risk.

The Jamaican findings should also be situated within the wider global transformation of childhood nutrition and NCD risk. WHO estimates indicate that more than 390 million children and adolescents aged 5–19 years were overweight in 2022, including approximately 160 million living with obesity.[2] Recent global analyses similarly demonstrate the extensive prevalence of childhood and adolescent overweight and obesity and their association with cardiometabolic comorbidities.[9] Jamaica is not experiencing an isolated national phenomenon but participating in a wider nutritional and epidemiological

transition. Nevertheless, international comparisons should not obscure local specificity. Jamaica's socioeconomic structure, food prices, school environments, patterns of urban and rural residence, public healthcare arrangements, cultural dietary practices, and Caribbean environmental conditions may modify how global risk processes are expressed locally. International evidence should consequently provide a comparative framework rather than substitute for national epidemiological surveillance.

The geographical composition of the sample similarly warrants future investigation. Rural children constituted the largest residential category at 42.3%, although children living collectively in the Greater Kingston Metropolitan Area and other urban centres represented 57.7% of the sample. These environments may expose children to different combinations of food availability, transportation patterns, recreational infrastructure, air quality, allergens, healthcare availability, and household socioeconomic conditions. Urban residence may increase exposure to some commercial food environments and sedentary behaviours, whereas rural residence does not necessarily guarantee healthier diets or greater physical activity and may create different barriers to specialist healthcare. The present descriptive findings cannot determine whether childhood asthma, obesity risk, functional limitation, or other NCD outcomes vary systematically between these environments. Nevertheless, the geographic diversity of the sample indicates that national averages could conceal meaningful spatial inequalities. Parish- and area-specific analyses should form part of future Jamaican childhood NCD research.

An additional contribution of the study is its demonstration that childhood NCDs should not be restricted conceptually to obesity and cardiometabolic disease. The prominence of asthma demonstrates that chronic respiratory disease is already manifest during childhood and may have immediate implications for quality of life, school participation, physical activity, sleep, caregiver burden, and healthcare utilisation [4]. Epilepsy, sickle cell disease, heart disease, cancer, and other comparatively uncommon conditions affect much smaller proportions of children but can generate substantial clinical and social burdens for affected families. Population prevalence alone cannot determine policy importance. A comparatively rare paediatric disease requiring specialist care, repeated hospitalisation, medication, educational accommodation, or long-term family support may warrant considerable health-system attention despite contributing little to national prevalence percentages. Childhood NCD policy must consequently balance population-wide prevention of common future risks with appropriate clinical and social support for smaller groups already living with serious chronic disease.

The findings also have implications for the conceptualisation of prevention. Primary prevention should seek to reduce the emergence of risk through healthier food environments, regular physical activity, reduced exposure to tobacco smoke and respiratory irritants, appropriate sleep, supportive mental-health environments, and equitable social conditions [1,2,9]. Secondary prevention requires early identification of asthma, obesity-related complications, elevated blood pressure, metabolic abnormalities, and psychological difficulties before substantial morbidity develops [4,6,7]. Tertiary prevention remains necessary for children already living with chronic disease, including ensuring disease control, reducing complications, maintaining educational participation, and supporting families. These levels of prevention should not be treated as competing priorities. Jamaica requires a childhood NCD strategy capable of managing disease that is already present while preventing the substantially larger adult burden that could

emerge from risks accumulating during childhood. This integrated approach follows logically from the bifurcated profile identified in the present analysis.

Schools constitute a particularly important setting for such an approach because they provide sustained contact with children across socioeconomic groups and can influence both health behaviour and health environments. The substantial prevalence of adolescent overweight and obesity reported in Jamaican school-health surveillance suggests that interventions limited to individual counselling are unlikely to be sufficient.[3] Food availability within and surrounding schools, access to safe drinking water, opportunities for structured and unstructured physical activity, health education, commercial marketing exposure, and referral mechanisms form part of the wider prevention environment. [1-3] At the same time, school-based programmes should avoid stigmatising children according to body size or health status. The objective should be to improve the healthfulness of the environment for all students while providing confidential and clinically appropriate referral for those requiring further assessment. Asthma management within schools is similarly important because appropriate recognition and response to exacerbations can reduce the health and educational consequences of poorly controlled disease [4].

A further implication concerns equity. Population-wide recommendations to consume healthier foods, increase physical activity, obtain preventive screening, and seek specialist care can appear universally applicable while overlooking differences in the resources required to implement them. Families facing economic constraints may encounter higher relative costs for nutritious foods, transportation, organised recreation, private healthcare, diagnostic investigations, or repeated clinical appointments. Because 51.0% of children in this study were drawn from the two poorest socioeconomic quintiles, an NCD strategy that relies predominantly on household purchasing power could reproduce or widen existing inequalities. Social and economic circumstances are increasingly recognised as important influences on childhood obesity and cardiometabolic health [9,12]. Universal school-based and primary-care interventions may have particular value because they can reduce dependence on private resources. However, universal programmes should be complemented by proportionately greater support for populations experiencing greater barriers.

Several contrary interpretations must nevertheless be acknowledged. First, the low prevalence of most chronic conditions may genuinely indicate that the overwhelming majority of children in the sample are currently free from established cardiometabolic and other serious NCDs, and the favourable functional-health findings provide some support for this interpretation. Second, adolescent obesity estimates cannot be applied directly to all children aged 0–14 years because the age structures differ and cardiometabolic risk changes considerably across childhood and puberty [3]. Third, socioeconomic disadvantage and lack of insurance should not automatically be assumed to produce poor health outcomes where public services, family resources, community support, and individual resilience may mitigate their effects. Fourth, the higher asthma prevalence reported by Kahwa et al cannot simply replace the present estimate because different case definitions capture different epidemiological constructs [4]. Finally, longitudinal research indicates that childhood excess weight does not necessarily produce elevated adult cardiovascular risk when weight status normalises before adulthood [10]. These qualifications are essential because a robust interpretation should

neither minimise childhood NCD risk nor exaggerate it beyond what the available evidence demonstrates.

The cross-sectional design further restricts causal interpretation. The present findings cannot establish whether socioeconomic disadvantage causes childhood chronic disease, whether insurance improves disease detection, whether residential location modifies asthma risk, or whether children currently experiencing excess adiposity will subsequently develop cardiometabolic disease. Moreover, because the parent survey details, weighting procedures, response rate, and proxy-reporting arrangements are not fully documented in the supplied output, the estimates should not automatically be interpreted as definitive contemporary national prevalence figures. These limitations do not eliminate the scientific value of the findings but determine the level at which conclusions can appropriately be drawn. The study is strongest as a descriptive and comparative epidemiological profile that identifies patterns and hypotheses requiring further investigation. Longitudinal research incorporating objective anthropometric, blood-pressure, biochemical, behavioural, environmental, and socioeconomic measures would be necessary to establish the proposed pathways more rigorously [8,10,11].

Taken collectively, the findings support a reconceptualisation of childhood within Jamaica's NCD agenda. Childhood should not be regarded simply as a low-disease interval preceding the age at which NCDs become important. Instead, it is a developmental period in which some chronic diseases—most visibly asthma—are already established while the biological, behavioural, environmental, and socioeconomic architecture of later cardiometabolic disease may simultaneously be developing [1-11]. The low reported prevalence of diabetes, hypertension, heart disease, and cancer is encouraging, but should represent an opportunity for prevention rather than a justification for policy complacency. Independent Jamaican evidence of adolescent overweight and obesity demonstrates that cardiometabolic prevention cannot reasonably be postponed until adult disease becomes clinically common [3,5]. Conversely, evidence that cardiovascular risk can be substantially modified when childhood excess weight does not persist into adulthood provides an important reason for optimism and strengthens rather than weakens the rationale for early intervention [10].

The broader contribution of this study is the identification of a **paediatric NCD paradox** within the Jamaican context: low reported prevalence of most established adult-type NCDs coexists with appreciable respiratory morbidity and substantial external evidence of emerging metabolic risk. This paradox is not a contradiction but a consequence of observing different points along the life-course disease continuum. Asthma represents disease already manifest; overweight and obesity represent important intermediate risks; socioeconomic vulnerability and limited insurance coverage represent contextual conditions that may influence exposure, detection, and management; and adult hypertension, diabetes, and cardiovascular disease represent potential downstream outcomes.[3-12] Understanding these dimensions simultaneously provides a more scientifically defensible interpretation than either declaring Jamaican children largely free from NCDs or portraying them as already experiencing an adult-type NCD epidemic. The available evidence supports neither extreme. Rather, childhood represents a strategic period during which existing chronic disease must be managed while considerable future disease remains potentially preventable.

Accordingly, Jamaica's childhood NCD response should integrate respiratory health, cardiometabolic prevention, mental-health

surveillance, socioeconomic equity, and developmentally appropriate measurement within a unified life-course framework. Current evidence supports maintaining strong attention to asthma while expanding surveillance beyond diagnosed disease to include anthropometry, age-appropriate blood-pressure measurement, diet, physical activity, sleep, environmental exposures, mental health, and selected metabolic indicators.[2-11] Future analyses should also test socioeconomic, sex, geographic, and insurance-related inequalities rather than assuming them from descriptive distributions. Such an approach would allow Jamaica to distinguish children who are currently healthy, those living with recognised chronic disease, those experiencing undiagnosed biological abnormalities, and those whose social and behavioural environments place them at elevated future risk. The central policy implication is not that Jamaican childhood is already dominated by cardiometabolic NCDs, but that waiting for these diseases to become clinically common would surrender a major opportunity for prevention. Childhood is consequently not peripheral to Jamaica's NCD response; it is one of the principal stages at which the country's future disease trajectory may still be altered.

Policy Implications

Jamaica requires a childhood NCD strategy that simultaneously addresses respiratory disease and cardiometabolic prevention. Asthma management should include early identification, appropriate pharmacological control, education of children and caregivers, school action plans, reduction of avoidable environmental triggers, and reliable access to primary and specialist care. Obesity prevention should operate through school food standards, accessible drinking water, physical activity, limits on unhealthy food marketing to children, household nutrition support, and broader food-policy measures. These approaches are complementary rather than competing. One addresses an established childhood chronic disease, while the other seeks to prevent the future accumulation of metabolic disease.

Schools are particularly important because they reach children independent of whether families routinely use preventive health services. Height, weight, health education, physical activity, and age-appropriate screening can potentially be integrated into school-health systems while avoiding stigma and protecting confidentiality. The objective should not be to label children by body size but to identify population trends and create healthier environments. Teachers cannot substitute for health professionals, and schools should not become diagnostic clinics. Rather, education and health systems should create structured referral pathways when concerns are identified.

Socioeconomic equity should be incorporated explicitly. Population policies that assume every household can purchase healthier foods, pay for organised recreation, attend frequent private consultations, or absorb transport costs may inadvertently widen inequalities. Universal and school-based interventions can partly reduce dependence on household purchasing power. Children with chronic disease also require protection against school exclusion and interruption of learning. NCD prevention is linked to educational equity.

Research Agenda

The next generation of Jamaican childhood NCD research should combine self-reported diagnoses with measured risk factors. Nationally representative data should include body mass index, central adiposity where appropriate, blood pressure, diet, physical

activity, sleep, tobacco and nicotine exposure, asthma symptoms, mental health, and selected metabolic biomarkers in age groups for which collection is ethical and scientifically justified. Longitudinal studies would be especially valuable because they could demonstrate how childhood exposures predict adolescent and adult outcomes. Socioeconomic and parish-level variables should permit analysis of inequalities rather than merely national averages. Standardisation across survey waves would permit true temporal trend assessment.

Greater attention is also required to the transition from childhood to adolescence. The present empirical cohort ends at 14 years, whereas major Jamaican school-health evidence covers ages 13–17. These overlapping but non-identical age structures should be analytically connected rather than treated as interchangeable. Puberty, autonomy over food purchasing, school transitions, alcohol and tobacco initiation, and changes in physical activity may alter NCD risk substantially during adolescence. Surveillance that separates early childhood, middle childhood, and adolescence would provide greater precision. Such stratification could reveal periods when intervention has the greatest preventive effect.

Strengths and Limitations

A major strength of this study is that it brings multiple childhood chronic conditions into one analytic profile rather than focusing exclusively on asthma or obesity. It additionally integrates health insurance, socioeconomic status, and functional health, thereby situating disease within a broader health context. Comparative interpretation with Jamaica-specific asthma and school-health research improves the epidemiological meaning of the raw prevalence estimates. The age-comparative design also demonstrates how dramatically cardiometabolic and functional morbidity accumulate over the life course. However, the study remains constrained by the provenance information available in the supplied output. The parent survey, field year, weights, sampling design, response rate, and proxy-reporting procedures must be documented before publication.

The absence of obesity, anthropometry, measured blood pressure, glucose, lipid values, and detailed behavioural risk factors is particularly consequential for the childhood paper. Self-reported diagnoses underestimate conditions that have not previously been detected. Several diseases are so rare that statistical testing becomes unstable, and the source output itself identifies violations of expected-frequency assumptions for several analyses. Comparisons with external studies are also limited by differences in age, year, case definition, and measurement. Consequently, this paper profiles reported morbidity and contextual risk rather than claiming to establish definitive contemporary national prevalence for every childhood NCD.

Conclusion

The NCD profile of Jamaican children differs fundamentally from the profile observed in older adults. Among children aged 0–14 years in the supplied output, asthma was the dominant reported chronic disease at 6.0%, whereas diabetes, hypertension, heart disease, cancer, arthritis, and kidney disease were rare. This pattern could be interpreted superficially as evidence that childhood NCDs constitute a minor Jamaican health problem. Such an interpretation would be scientifically incomplete. Independent Jamaican evidence of substantial adolescent overweight and obesity demonstrates that future cardiometabolic risk is already being accumulated before adulthood.

The public-health significance of the childhood profile lies in the coexistence of current respiratory morbidity, socioeconomic vulnerability, limited insurance coverage, and emerging metabolic risk. Preventing adult NCDs requires intervening before adult disease becomes clinically established. Jamaican policy should consequently treat childhood asthma management, healthy weight, food environments, physical activity, mental health, and preventive surveillance as components of one life-course NCD agenda. Surveillance should differentiate diagnosed disease from measured biological risk and should examine socioeconomic inequalities explicitly. A country cannot reverse an adult NCD epidemic while allowing its determinants to become progressively embedded in younger generations. Childhood is not peripheral to Jamaica's NCD strategy; it is one of the principal sites at which the future trajectory can still be altered.

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