

Pediatric Healthcare Disparities And Strategies For Achieving Equitable Health Outcomes Among Diverse Populations

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Abstract

Background: Disparities in pediatric healthcare continue to be a formidable issue in the world, especially in relation to the socioeconomically disadvantaged and marginalized groups. Lack of equitable access to healthcare services, preventive care and quality of treatment are some of the factors that cause disparate health outcomes in children.

Objective: This research endeavors to measure inequities in pediatric healthcare access and outcomes, and consider measures to meet equitable health outcomes in the varied populations. **Methodology:** Trimoxians were used to perform a comparative cross-sectional study of 900 pediatric patients under-served (n=480) and well served (n=420). The information was obtained in the form of hospital records, household surveys and community health reports. The crucial parameters were immunization rates, usage of healthcare facilities, disease rates, and recovery. Statistics were done using chi-square and logistic regression where a significance of $p < 0.05$ was set.

Findings: There was a great difference between immunization coverage among poorly served groups (60) and well served groups (90) ($p < 0.001$). There was also a decrease in the access to regular healthcare (45% vs 78%). Prevalence of the disease increased (30% vs 15) and hospitalization rates were higher (25% vs 12) in the case of underserved children. **Conclusion:** Child disparities in healthcare have a significant effect on child health results. To streamline equity in pediatric health, policies, interventions as well as better access to healthcare are needed.

Keywords: Pediatric health, healthcare disparities, health equity, immunization, child health outcomes, healthcare access.

1. Introduction

Healthcare disparity among children has been an ongoing worldwide issue, which is filed within the intricate interaction of socioeconomic, geographic and cultural factors, which impact the quality of healthcare provisions acceded. Children belonging to underprivileged groups such as low-income families, rural communities, and marginalized groups are frequently at a great disadvantage due to barriers in early diagnosis, preventive medicine, and effective treatment [1][2]. Such disparities are the cause of increased morbidity and hospitalization rates and preventable mortality among vulnerable children populations [3]. One of the major determinants of health outcomes in the pediatric population is socioeconomic status that influences the accessibility to nutrition, education, and healthcare. Research demonstrated repeatedly that children in poorer families are less likely to be vaccinated and have frequent medical examinations and are thus exposed to adverse conditions of infectious diseases and lagging development [4][5]. All these challenges are further enhanced by geographic variations since rural and remote areas do not have sufficient healthcare facilities and health specialists [6]. Moreover, health beliefs, language barriers, and social exclusion are some of the cultural determinants that limit the use of healthcare and adherence to treatment [7]. The healthcare systems in many countries have achieved some gains towards the improvement of child health outcome but there are still disparities between and within countries [8]. The World Health Organization highlights that to reach universal health coverage they need to overcome these disparities by targeting and including them in a specific manner [9]. Non-interventional measures such as immunization against diseases and preventive care given to children at an early age have proven to lead to a great cut in the disease burden when distributed fairly [10]. The recent findings indicate the usefulness of community-based interventions and policy reforms as prevention of pediatric healthcare disparities. Community-based health worker-based, mobile health technology, and school-based health programs have shown to be associated with better access and health outcomes in underserved groups [11][12]. Moreover, primary healthcare systems need to be strengthened and the adequate resources distributions is important in order to be able to access sustainability in child health

improvements [13]. Although this has been achieved, there are still gaps in the knowledge on the effects of various strategies on various populations. Numerous researches are dedicated to single-intervention studies, and their joint impact on health equity is not considered. It also has less comparative analysis of healthcare access and outcomes in different types of demographics in the same study framework [14].

1.1 Research Gap

No thoroughly and comparatively conducted studies simultaneously evaluate the differences in pediatric healthcare access, use, and outcome and the effectiveness of integrated approaches in a variety of populations. Also, there is not a strong body of literature on the impact of combined socioeconomic, geographic, and cultural elements on pediatric health equity.

1.2 Objectives

- To evaluate inequalities in the healthcare access and outcomes of children.
- To draw comparisons between health among various groups of population.
- To assess the options to attain equitable health outcomes in pediatrics.

2. Methods

2.1 Study Design

A cross-sectional study was done to analyze the disparities of access and outcome of pediatric healthcare among different populations. The categorization of the participants was done into two groups which are; underserved group although has limited access to healthcare services and a well-fortunate dependency group, which has a comparatively improved access to healthcare facilities and services. This design allowed comparing health indicators and outcomes of individual groups of people at a given time period [15].

2.2 Study Population

The participants (900 pediatric patients aged between 0 and 12 years old) were recruited in an urban and rural healthcare setting. Based on predetermined criteria concerning socioeconomic and access to healthcare distribution, as demonstrated in table 1 participants were divided into underserved (n = 480) and adequately served (n = 420) groups.

Table 1: Distribution of Study Population

Group	Participants (n)	Percentage (%)
Underserved	480	53.3
Adequately Served	420	46.7
Total	900	100

2.3 Variables Assessed

The main variables were the access to healthcare services (availability and frequency of visits), immunization status (complete/incomplete), nutritional status (in terms of growth indicators) as well as disease incidence (reported and diagnosed illnesses). All these variables were chosen because they are strongly correlated with the outcomes of pediatric health, and health equity [16].

2.4 Data Collection

To promote credibility, several sources were used to gather the data and they are validated. Clinical and treatment data were obtained provided in the form of hospital and clinic records, socioeconomic and access to healthcare information was obtained through household surveys, and population-wide insights were generated through reports by community health.

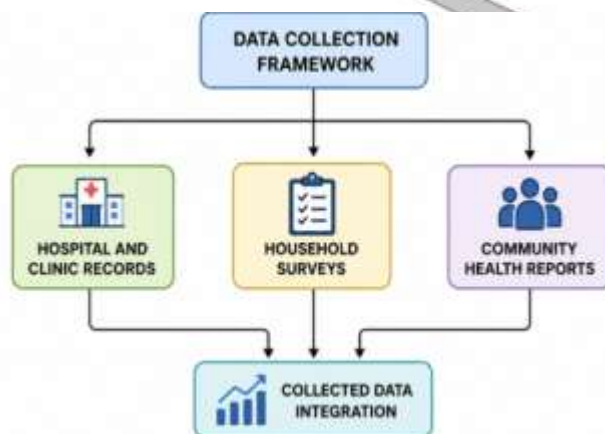


Figure 1: Data Collection Framework

Figure 1: Data Collection Framework is the presentation of how the data is going to be gathered by using various sources of data collection such as record of hospitals and clinics, household survey, and community health reports. These resources have been designed to create a multi-layered dataset, which promises careful reliability and validity to the study and an in-depth view of pediatric healthcare disparity in a variety of populations.

2.5 Outcome Measures

Examples of primary outcome measures were immunization coverage, disease prevalence, hospitalization and recovery as indicated in table 2. Immunization coverage was considered as the percentage of children who are vaccinated against all the recommended vaccines, and the prevalence of the diseases indicated the rate of reported diseases among the study children.

Table 2: Outcome Measures

Outcome Category	Indicators
Preventive Care	Immunization coverage
Disease Outcomes	Prevalence of illness
Healthcare Utilization	Hospitalization rates
Recovery Outcomes	Recovery without complications

2.6 Statistical Analysis

The use of statistical software was utilized in the analysis of data. Descriptive statistics profiled features of the participants and health. Associations among group status and categorical variables were analyzed by use of chi-square tests. The poor health outcomes were used to determine the predictors with the help of logistic regression models, keeping ages and socioeconomic status as the confounding factors. To measure group disparities, relative risk (RR) was determined. Statistical significance was set at $p < 0.05$ [17][18].

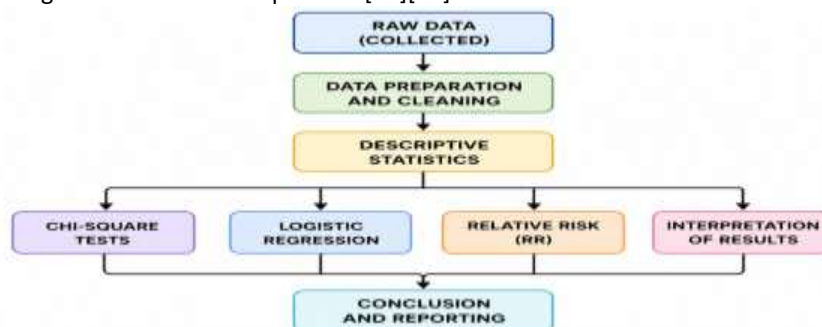


Figure 2: Analytical Approach

Figure 2: Analytical Approach summarizes analytical approach of collected data. It starts with the preparation of data and the descriptive statistics and then moves on to the inferential statistics, with chi-square tests, logistic regression

and the estimation of the relative risks. Interpretation and reporting form the end of the process and make sure that the evaluation of pediatric healthcare disparities and outcomes can be performed correctly.

3. Results & Discussion

In this section, the authors offer the comparative analysis of the outcomes of the pediatric healthcare in underserved and well-served groups. The findings reveal that there is a serious gap in healthcare accessibility, immunizations, disease rates and recovery. Groups of children that were under-served had less use of preventive services and increased morbidity and hospitalization. The statistical analysis shows that there is a strong association between child health outcomes and healthcare access. Such results highlight the urgency of specific efforts and universal care measures to decrease the gap and enhance childhood health outcomes among various groups.

3.1 Participant Characteristics

A total of 900 children were involved in the study, and proportion of underserved populations (53.3) in it exceeded adequately served ones (46.7) just a bit. This distribution facilitates healthy comparisons of the existence of healthcare disparity among population groups.

Table 3: Distribution of Pediatric Participants

Group	Participants (n)	Percentage (%)
Underserved	480	53.3
Adequately Served	420	46.7
Total	900	100

3.2 Healthcare Access and Utilization

There were high differences in access and use of health care. Among the children of the under served population, the proportion of regular check-ups was lower (45%), as opposed to well served groups (78%). Likewise, the coverage of immunization was quite lower in underserved groups (60% vs 90%), and both differences were significant ($p < 0.001$).

Table 4: Access to Healthcare Services

Indicator	Underserved (%)	Served (%)	p-value
Regular Check-ups	45%	78%	<0.001
Immunization Coverage	60%	90%	<0.001

3.3 Disease Prevalence

The presence of frequent disease among children within underserved groups was also of specific concern as it showed the effects of ineffective preventive services and the availability of healthcare. Excessive exposure to risk issues and differences in timely treatment add to the greater burden of diseases in these populations.

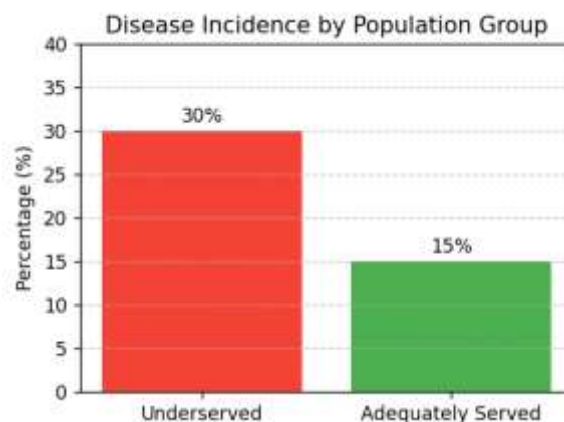


Figure.3. Disease Incidence by Population Group

Figure 3 Disease Incidence by Population Group shows the difference between poorly served and well served populations in regards to prevalence of the disease. The chart illustrates that the rate of diseases contracted by underserved children is high as compared to those that have more access to healthcare. This disparity indicates how preventive care limitations and reduced immunization rates and delayed treatment contribute to growing disease burden.

3.4 Hospitalization and Outcomes

The hospitalization rates in underserved groups during a time frame (25% versus 12% in adequately served groups) were significantly lower ($p = 0.01$). The recovery rates were also reduced in the case of underserved children (70% vs 88%), whereas the number of complications was higher (18% vs 8%), which proved poor health outcomes.

Table 5: Health Outcomes Comparison

Outcome	Underserved (%)	Served (%)	p-value
Hospitalization	25%	12%	0.01
Recovery Rate	70%	88%	0.01
Complications	18%	8%	0.02

3.5 Impact of Intervention Strategies

The intervention methods were shown to result in notable gains in access and health outcomes of underserved populations. Community outreach programs, immunization campaigns, better healthcare access led to decreased inequalities.

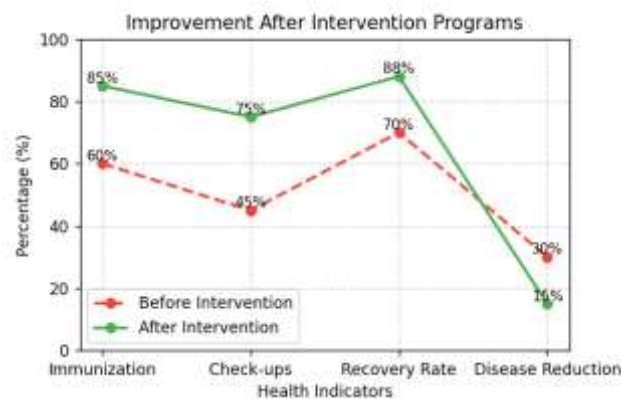


Figure 4: Improvement after Intervention Programs

As shown in figure 4 Improvement after Intervention Programs shows the good effect of specific interventions in healthcare on the results of pediatrics. The chart indicates a rise in immunization coverage, ease of accessing frequent check-ups and recovering better, in addition to a fall in disease occurrence. The effectiveness of community-based programming and policy actions in lessening disparities and improving the total health of children is noted in these improvements.

4. Discussion

The results of this research indicate significant differences between the underserved population and the populations that receive sufficient healthcare and achievement in relation to the results of the healthcare support. The children in underserved categories had less access to preventive care such as check-ups and immunization that resulted in a greater disease burden and higher hospitalizations. These gaps are indicative of greater systemic inequalities that impact on access to healthcare, its affordability and usage. The paper highlights that one of the key factors that determine access to healthcare is socioeconomic status, which affects the availability of families to access care at the right time and in the most appropriate manner. Preventive healthcare services, specifically immunization and frequent health screening are crucial in lowering the diseases and enhancing better child health outcomes. Moreover, especially community outreach initiatives and better healthcare facilities have proven to be effective in the decrease of disparities and enhancing health equity.

4.1 Comparison with a Study that has been done before

The findings are supportive with the available evidence internationally, which has found healthcare inequalities as the cause of child health care disparities. Such inequalities have been noted by previous studies in which children with disadvantaged backgrounds stand a higher chance of poor health outcomes as a result of poor access to quality healthcare services.

Limitations

There are some limitations in this study. The cross-sectional design excludes the possibility of causal relationships to be developed between healthcare access and results. Moreover, self-reported and recorded data may lead to the bias of reporting. The geographic limitations of the study can also have an impact on the extrapolability of the results to other environment.

5. Conclusion

This paper has found that healthcare disparities among pediatrics have a huge impact on the health outcome of children among different populations. Lower access to preventive care, reduced immunization levels, and increased disease and hospitalization are found in children in underserved communities. Conversely, properly attended populations have an opportunity to access healthcare and recover better. These results highlight the importance of socioeconomic and healthcare system determinants that significantly influence the health of a child. To overcome these disparities, special measures such as the reinforcement of primary health systems, increasing immunization, and enhancing access to necessary services, are needed. Policy reforms and community-based programs are needed to seal the gaps that may exist between communities and encourage the provision of equitable healthcare. Altogether, health equity can be essential in pediatric care to enhance the health of the population and guarantee more promising outcomes in children on both global and local scales.

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