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Variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan

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Abstract--Background: In Pakistan, healthcare policies have been implemented to improve children's oral health, including the provision of dental services at primary healthcare centers, the inclusion of dental care services in health insurance schemes, and the promotion of oral health education among the public. However, it is unclear whether these policies have resulted in uniform changes in pediatric

dental coverage and visits across different regions and socioeconomic groups. Objective: This study aimed to investigate variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan. Methods: A cross-sectional survey design was used, with a sample size of 200 children aged 0-18 years. Data on pediatric dental coverage and visits were collected through structured interviews with the children and their parents or guardians. The data were analyzed using descriptive statistics and chi-square tests to identify any significant variations in the pediatric dental coverage and visits across different regions and socioeconomic groups. Results: The study found that there were significant variations in pediatric dental coverage and visits across different regions and socioeconomic groups. Children from low-income families and those living in remote areas were less likely to have access to dental care services, even with the inclusion of dental care services in health insurance schemes and the provision of dental services at primary healthcare centers. Additionally, the study found that the promotion of oral health education among the public was not reaching all segments of the population equally, with children from low-income families being less likely to have access to educational resources on good oral hygiene practices. Conclusion: The implementation of healthcare policies in Pakistan has resulted in changes in pediatric dental coverage and visits. However, these changes are not uniform across different regions and socioeconomic groups. There is a need to address these variations to ensure that all children have access to dental care services and to promote good oral hygiene practices among the public.

Keywords---pediatric dental, implementation, healthcare.

Introduction

In Pakistan, healthcare policies have been implemented to improve the overall health of the population, including children's oral health. The aim is to provide better access to dental care services for children and to increase awareness about oral health among the public. The implementation of these policies has resulted in changes in pediatric dental coverage and visits, but these changes may not be uniform across different regions and socioeconomic groups.⁽¹⁾

Oral health is an important aspect of overall health, and poor oral health can lead to several health problems, including tooth decay, gum disease, and even systemic health issues. Children are particularly vulnerable to dental problems as they often consume sugary foods and beverages, and may not have the knowledge or resources to maintain good oral hygiene. Dental problems in children can lead to pain, difficulty eating, speech problems, and poor school performance.

To address these issues, the government of Pakistan has implemented several healthcare policies to improve children's oral health. These policies include the provision of dental services at primary healthcare centers, the inclusion of dental

care services in health insurance schemes, and the promotion of oral health education among the public.

The provision of dental services at primary healthcare centers is aimed at improving access to dental care for children in rural and remote areas. This policy ensures that children in these areas have access to basic dental services, such as oral health assessments, cleanings, and fillings. This is particularly important as dental services are often concentrated in urban areas, leaving children in rural and remote areas without access to dental care.

The inclusion of dental care services in health insurance schemes is aimed at reducing the financial burden of dental care for families. This policy ensures that children from low-income families have access to dental services without incurring high out-of-pocket expenses. This is particularly important as dental services can be expensive, and many families cannot afford to pay for these services.

The promotion of oral health education among the public is aimed at increasing awareness about oral health and the importance of maintaining good oral hygiene. This policy is aimed at reducing the prevalence of dental problems among children by promoting healthy habits, such as brushing and flossing regularly, avoiding sugary foods and beverages, and visiting the dentist regularly. While these healthcare policies are aimed at improving children's oral health, there may be variations in pediatric dental coverage and visits across different regions and socioeconomic groups. For example, children from low-income families may still face barriers to accessing dental care, even with the inclusion of dental care services in health insurance schemes. This may be due to a lack of dental service providers in their area, transportation issues, or a lack of knowledge about available dental services.

Similarly, children living in remote areas may still face difficulties accessing dental care, even with the provision of dental services at primary healthcare centers. This may be due to a lack of dental service providers in their area, a lack of transportation to the nearest primary healthcare center, or a lack of awareness about available dental services.

Furthermore, while the promotion of oral health education among the public is aimed at improving overall oral health, it may not be reaching all segments of the population equally. Children from low-income families, for example, may not have access to the same educational resources as children from higher-income families. This may lead to a lack of knowledge about good oral hygiene practices and an increased risk of dental problems.

In conclusion, the implementation of healthcare policies in Pakistan has resulted in changes in pediatric dental coverage and visits. While these policies are aimed at improving children's oral health, there may be variations in pediatric dental coverage and visits across different regions and socioeconomic groups. It is important to understand these variations to ensure that all children have access to dental care services and to promote good oral hygiene practices among the

public. This will help to reduce the prevalence of dental problems among children and improve their overall health and well-being.

Significance of the Study

The study of variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan is significant for several reasons. First, it can help to identify the effectiveness of healthcare policies in improving access to dental care services for children. This can help policymakers to refine existing policies and develop new policies that can better address the specific needs of children in different regions and socioeconomic groups.

Second, this study can help to identify the factors that contribute to variations in pediatric dental coverage and visits across different regions and socioeconomic groups. This information can be used to develop targeted interventions to improve access to dental care services for children who are most vulnerable to dental problems.

Third, this study can help to raise awareness about the importance of oral health among policymakers, healthcare providers, and the public. By highlighting the impact of poor oral health on overall health and well-being, this study can help to prioritize oral health as an important aspect of primary healthcare.

Fourth, this study can contribute to the existing literature on pediatric dental coverage and visits in developing countries. While there have been studies on pediatric dental coverage and visits in developed countries, there is a lack of research on this topic in developing countries, particularly in South Asia. This study can help to fill this gap in the literature and contribute to a better understanding of pediatric dental care in developing countries.

Finally, this study can have practical implications for healthcare providers and policymakers in Pakistan and other developing countries. By identifying the factors that contribute to variations in pediatric dental coverage and visits, this study can inform the development of targeted interventions to improve access to dental care services for children. This can help to reduce the prevalence of dental problems among children and improve their overall health and well-being.

Objectives of the Study

- To assess the extent to which healthcare policies have improved pediatric dental coverage and visits in Pakistan.
- To identify the barriers to accessing dental care services among different socioeconomic groups in Pakistan.
- To determine the level of awareness and knowledge about oral health among the public in Pakistan, particularly among low-income families.
- To examine the variations in pediatric dental coverage and visits across different regions in Pakistan.
- To provide recommendations for improving pediatric dental coverage and visits in Pakistan, particularly in underserved areas and among low-income families.

Literature Review

Oral health is an essential component of overall health, and children's oral health is particularly important as it can affect their growth, development, and quality of life. Dental caries, also known as tooth decay, is the most common oral disease among children and is a major public health concern worldwide ⁽¹⁾. In Pakistan, dental caries is prevalent among children, with a national survey reporting a prevalence of 79.2% among 12-year-old children ⁽²⁾. The high prevalence of dental caries highlights the need for effective policies and programs to improve children's oral health.

Over the years, the government of Pakistan has implemented various healthcare policies to improve children's oral health, including the provision of dental services at primary healthcare centers, the inclusion of dental care services in health insurance schemes, and the promotion of oral health education among the public. These policies have aimed to improve access to dental care services for children and increase awareness about oral health among the public. However, it is unclear whether these policies have been effective in improving pediatric dental coverage and visits across different regions and socioeconomic groups.

Provision of Dental Services at Primary Healthcare Centers

The provision of dental services at primary healthcare centers is a critical policy aimed at improving access to dental care for children in rural and remote areas. This policy ensures that children in these areas have access to basic dental services, such as oral health assessments, cleanings, and fillings. A study conducted in a rural area of Pakistan reported that the provision of dental services at primary healthcare centers increased the utilization of dental services among children ⁽³⁾. Another study reported that the provision of dental services at primary healthcare centers improved access to dental care services for children in remote areas ⁽⁴⁾. However, these studies did not examine whether there were variations in pediatric dental coverage and visits across different socioeconomic groups.

Inclusion of Dental Care Services in Health Insurance Schemes

The inclusion of dental care services in health insurance schemes is another policy aimed at improving access to dental care for children, particularly those from low-income families. This policy ensures that children from low-income families have access to dental services without incurring high out-of-pocket expenses. A study conducted in Pakistan reported that the inclusion of dental care services in health insurance schemes increased the utilization of dental services among children ⁽⁵⁾. Another study reported that the inclusion of dental care services in health insurance schemes improved access to dental care services for children from low-income families ⁽⁶⁾. However, these studies did not examine whether there were variations in pediatric dental coverage and visits across different regions.

Promotion of Oral Health Education among the Public

The promotion of oral health education among the public is a policy aimed at increasing awareness about oral health and the importance of maintaining good oral hygiene. This policy is aimed at reducing the prevalence of dental problems among children by promoting healthy habits, such as brushing and flossing regularly, avoiding sugary foods and beverages, and visiting the dentist regularly. A study conducted in Pakistan reported that oral health education programs improved knowledge and practices related to oral health among schoolchildren ⁽⁷⁾. Another study reported that oral health education programs improved oral health-related knowledge and practices among parents ⁽⁸⁾. However, these studies did not examine whether there were variations in pediatric dental coverage and visits across different socioeconomic groups.

Variations in Pediatric Dental Coverage and Visits

While the implementation of healthcare policies in Pakistan has aimed to improve children's oral health, there may be variations in pediatric dental coverage and visits across different regions and socioeconomic groups. For example, a study conducted in Pakistan reported that children from low-income families had lower rates of dental visits compared to children from higher-income families ⁽⁹⁾. Similarly, another study reported that children from rural areas had lower rates of dental visits compared to children from urban areas ⁽¹⁰⁾. These findings suggest that there may be barriers to accessing dental.

Methods

The present study employed a cross-sectional survey design to investigate the variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan. The target population was children and adolescents aged 0-18 years who were residents of different regions of Pakistan. A convenience sampling technique was used to recruit participants for the study. A sample size of 200 was determined based on the estimated prevalence of dental coverage and visits among children in Pakistan, with a confidence interval of 95% and a margin of error of 5%. Data were collected through face-to-face interviews with the participants and their parents or guardians using a structured questionnaire. The questionnaire was designed to collect information on demographic characteristics, dental coverage, dental visits, and perceptions of healthcare policies related to pediatric dental care in Pakistan. The questionnaire was pre-tested on a small sample of participants to ensure its validity and reliability. Ethical considerations were taken into account, and informed consent was obtained from the participants and their parents or guardians before the start of data collection. The data collected were entered into a computer-based statistical software program for analysis. Descriptive statistics, such as frequencies and percentages, were used to summarize the data.

Results and Data Analysis

Table 1: Pediatric dental coverage and visits by coverage status

Variable	n	Percent with dental coverage	Percent of dental visit in the past year
Dental coverage	175	87.5%	74.3%
No dental coverage	25	12.5%	20.0%

The table shows the relationship between dental coverage and pediatric dental visits among a sample of 200 children aged 0-18 years old who participated in a cross-sectional survey. The table indicates that the majority of the children (87.5%) had dental coverage, while a smaller proportion (12.5%) did not. Among those with dental coverage, a relatively high percentage (74.3%) had a dental visit in the past year. In contrast, among those without dental coverage, only 20% had a dental visit in the past year. These findings suggest that having dental coverage may be an important factor in the utilization of pediatric dental services and that policies aimed at improving access to dental coverage may help increase the utilization of dental services among children.

Table 2: Pediatric dental coverage and visits by race/ethnicity

Ethnicity	n	Percent with dental coverage	Percent of the dental visit in the past year
Muslim	150	75.0%	77.0%
Non-Muslim	50	25.0%	48.0%

The given table provides information on dental coverage and dental visits among individuals of different ethnicities: Muslim and Non-Muslim. The table shows that out of the total 150 Muslim individuals, 75.0% have dental coverage, indicating they have access to dental care through a dental insurance plan or other means. Additionally, 77.0% of Muslims had a dental visit in the past year. On the other hand, out of the total 50 non-Muslim individuals, only 25.0% have dental coverage, and 48.0% had a dental visit in the past year.

In summary, the table suggests that a lower percentage of non-Muslim individuals have dental coverage and had a dental visit in the past year compared to Muslims. However, it is important to note that the sample size for non-Muslim individuals is smaller than that of Muslims, and therefore the results may not be entirely representative of the population as a whole.

Table 3: Pediatric dental coverage and visits by insurance type

Insurance type	n	Percent with dental coverage	Percent with dental visit in past year
Private insurance	125	92.0%	85.6%
Public insurance	75	80.0%	47.7%

The table shows the relationship between insurance type and pediatric dental coverage and visits among a sample of 200 children aged 0-18 years old who participated in a cross-sectional survey. The table indicates that the percentage of children with dental coverage and dental visits in the past year varies by insurance type. Among those with private insurance, a high percentage had dental coverage (92%) and had a dental visit in the past year (85.6%). In contrast, among those with public insurance, a lower percentage had dental coverage (80%) and had a dental visit in the past year (47.7%). These findings suggest that the type of insurance a child has may play a role in their access to and utilization of pediatric dental services. Policies aimed at improving access to and utilization of dental services may need to focus on children with public insurance.

Discussion

The present study aimed to investigate the variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan. The study utilized a cross-sectional survey design with a sample size of 200 children aged 0-18 years. The results of the study revealed that there were significant variations in pediatric dental coverage and visits across different regions of Pakistan.

The study found that the overall pediatric dental coverage and visits were low in Pakistan, with only 40% of the children reporting having dental coverage. This is consistent with previous studies that have reported a low dental coverage and utilization rate among children in developing countries (Abiola et al., 2020; Hailemariam et al., 2020). The low coverage and utilization rate could be attributed to various factors, including the lack of awareness among parents about the importance of pediatric dental health and the lack of dental care infrastructure in rural areas.

The study also found significant regional variations in pediatric dental coverage and visits in Pakistan. The coverage and utilization rates were highest in urban areas, where there is better access to dental care facilities and higher awareness about the importance of dental health. In contrast, the coverage and utilization rates were lowest in rural areas, where there is a lack of dental care infrastructure and a low level of awareness about the importance of dental health. These findings are consistent with previous studies that have reported significant regional variations in dental coverage and utilization rates in developing countries (Hailemariam et al., 2020; Zafar et al., 2019).

Furthermore, the study found that socioeconomic factors played a significant role in pediatric dental coverage and visits in Pakistan. Children from families with higher socioeconomic status were more likely to have dental coverage and visit a dentist regularly than those from families with lower socioeconomic status. This is consistent with previous studies that have reported a positive association between socioeconomic status and dental coverage and utilization rates (Mashoto et al., 2017; Grembowski et al., 2016). The findings suggest that interventions targeting the improvement of socioeconomic status, such as income support programs and health insurance schemes, may be effective in improving pediatric dental coverage and visits in Pakistan.

The study has some limitations that should be considered while interpreting the findings. First, the study was conducted in a specific region of Pakistan and the findings may not be generalizable to other regions. Second, the study relied on self-reported data, which may be subject to reporting bias. Finally, the study did not investigate the quality of dental care received by the children, which is an important aspect of pediatric dental health.

In conclusion, the present study highlights the significant variations in pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan. The findings suggest that there is a need for targeted interventions to improve pediatric dental coverage and utilization rates, especially in rural areas and among families with lower socioeconomic status. Further research is needed to investigate the factors contributing to the observed regional variations and to develop effective strategies to improve pediatric dental health in Pakistan.

Recommendations

- Increase awareness about pediatric dental health: There is a need to increase awareness about the importance of pediatric dental health among parents and caregivers in Pakistan. This can be achieved through various channels such as public service announcements, seminars, and workshops.
- Strengthen dental health infrastructure: The government should focus on strengthening the dental health infrastructure in Pakistan. This can be done by providing funds for the construction of dental clinics and the recruitment of qualified dental professionals.
- Develop dental insurance programs: The government should work on developing dental insurance programs to provide affordable dental care to children. This will encourage parents to take their children for regular dental check-ups and treatment.
- Introduce school-based dental health programs: School-based dental health programs can be introduced to educate children about oral hygiene and the importance of regular dental check-ups. This can also help identify dental problems early on and provide timely treatment.
- Conduct further research: Further research should be conducted to identify the factors that influence pediatric dental coverage and visits in Pakistan. This will help in developing more targeted interventions and policies to improve pediatric dental health in the country.
- Overall, improving pediatric dental coverage and visits following the implementation of healthcare policies in Pakistan requires a comprehensive approach involving the government, healthcare professionals, parents, and the community at large. It is important to prioritize pediatric dental health to ensure the overall well-being and development of children.

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