

Impact Of Health Insurance On Healthcare Access And Utilization For Children In Eastern Province, Saudi Arabia: Cross-Sectional Study

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ABSTRACT

Objective: To assess the impact of health insurance on access to and utilization of healthcare services, particularly timely health-seeking behavior for sick children, in the Eastern Province of Saudi Arabia.

Study Design: Cross-sectional study.

Place and Duration of Study: The study was conducted in the Eastern Province of Saudi Arabia over a defined study period (January 8, 2024, until October of 2024).

Material and Methods: A cross-sectional survey was conducted on parents and guardians who lived in the Eastern Province. Total 125 participants were recruited through a purposive sampling method. A structured online questionnaire was used to collect data on the topics of health insurance status, access to healthcare, affordability, quality of care, and patterns of use on the children. Participant characteristics and responses were summarized using descriptive statistics. Chi-square test was used to test the relationship between the health insurance status and healthcare utilization and satisfaction where the p-value of less than 0.05 was taken as statistically significant.

Results: Out of the respondents, 50.4% said that their children had not been covered by health insurance, and 45.6% insurance covered children. There were positive perceptions concerning the accessibility, affordability and quality of care with respect to healthcare. The statistical analysis showed that there was a strong relationship between health insurance cover and satisfaction with healthcare utilization ($p < 0.05$). Lack of insurance and financial constraints were cited as significant factors to impeding access to timely healthcare with the uninsured children overwhelmingly being affected.

Conclusion: Health insurance can be important when it comes to facilitating accessibility of healthcare services and ensuring timely health-seeking behavior amongst children in Saudi Arabia. The policy measures required to tackle the healthcare disparities and enhancing the pediatric health outcomes are to expand insurance coverage and decrease financial barriers.

Key Words: Children, healthcare access, healthcare utilization, health insurance, health-seeking behavior, Saudi Arabia.

INTRODUCTION

As the healthcare system evolves and continuously changes, the World Health Organization (WHO) emphasizes the importance of accessibility to essential healthcare services. It is one of the most critical approaches to promoting socioeconomic equity within national healthcare systems ¹. Hence, in line with this, one of the primary objectives of policymakers in different nation's healthcare and treatment domains, including the Kingdom of Saudi Arabia (KSA), is to enhance the accessibility and utilization of healthcare services ².

The primary objective of health insurance is to eliminate significant barriers to healthcare accessibility, particularly for marginalized populations within society ³. According to the WHO, it is imperative to establish a prepayment mechanism to provide an effective accessibility approach to expensive healthcare services ⁴.

The prepayment mechanism facilitates the equitable distribution of financial distress among the members of a fund, and the practice of risk pooling, whereby individuals with good health contribute to support others with poor health, individuals with higher income support those with lower income, and younger individuals support older people, can result in the comprehensive utilization of healthcare services when necessary ⁵.

Consequently, individuals lacking health insurance coverage may face challenges when they become sick ⁶. In line with this, people without health insurance are at a higher risk of encountering numerous barriers when accessing healthcare services. This shows that it minimizes their access to and utilization of healthcare services ⁷.

Research has indicated that parents' insurance status significantly impacts the extent to which children access and utilize healthcare services. The access and rate of utilization of health services in Saudia Arabia is expected to be

affected by the expansion of access to health insurance, which is in line with Vision 2030⁷. This is because health services is mostly used among individuals having health insurance⁸.

In other words, individuals with insurance are more likely to seek medical assistance in the event of illnesses, particularly with the expansion of the Cooperative Health Insurance System⁹. Furthermore, even within the demographic of children, the absence of insurance coverage results in a significant dearth of necessary healthcare services. Improving children's healthcare faces significant hurdles in many developing countries due to problems with nutrition and inadequate healthcare utilization¹⁰.

Overall, many existing studies have shown a positive association between having insurance and the healthcare services utilization. However, many of these studies have been conducted in other nations¹¹. They cannot be generalized to Saudi Arabia, which has differences in its economic, social, and political settings as well as how healthcare financing is structured. Moreover, many Saudi studies consider insurance's impact on the general population but not on children⁸. Nevertheless, empirical data over the impact of insurance on healthcare access and usage among children under the age of 18 in the KSA are inadequate. Hence, this study will seek to examine whether health insurance in Saudi Arabia positively affects their healthcare services utilization as well as access.

Methodology

It was cross-sectional research that was done during January 8, 2024, until October of 2024. In this study, the population of interest was children under 18 years living in the eastern province of KSA, but the questions will be directed to the parents/guardians. The sample was obtained via non-probability purposive sampling technique. Based on the available studies, a sample size of 125 individuals was included in the study. In this study, questionnaires were used to collect the data whereby the survey questions were adapted the National Survey of Children's Health conducted in 2007, and 2011/2012 by the CDC for Health Statistics Maternal and Child Health Branch¹². The questionnaire was administered through email whereby a link to the Google documents was sent to the respondents and is more convenient.

Data collection and analysis

To ensure that the research met all the ethical standards set by the institution's policy and guidelines, a university ethical requirements letter was acquired and obtained approval for the study. To obtain data, a survey questionnaire was filled from the target population. The respondents were first contacted through social media platforms such as WhatsApp and Telegram whereby they were requested to take part in the survey after being informed of the intentions of the research and its benefits. They were given a period of two weeks to fill in the questionnaire after which the survey was closed to allow for ample time for data analysis.

SPSS version 27 was utilized to analyze the obtained data using descriptive and inferential statistics. The descriptive analysis was used to summarize sample characteristics and their healthcare utilization patterns in the Eastern Province of KSA. It was used to summarize and describe basic features of the data, including frequency, percentage, mean, and standard deviation, which are key to identifying any trends and understanding the distribution of variables within the dataset. Inferential statistics were then used to test the study hypothesis about how health insurance affects their healthcare utilization. The study used the Chi-Square test for the estimation of association between parental health insurance and healthcare utilization and access for children. The Chi-Square statistic is used to calculate a p-value. A p-value (<0.05) denote the observed difference between insured/uninsured and utilization levels is statistically significant.

Results

The male respondents were 68 (54.4%) and female respondents were 57(45.6%). The findings show that the maximum participants were at the age of 35-44 years, 40 (32%), 33 (26.4%) were between 25-34, 28 (22.4%) between 45 years and above, 5 (4.0%) were under the age of 18 years. Regarding nationality, 122 (97.6%) were Saudi nationals while 3 (2.4%) were non-Saudis. In regard to education, the majority of the respondents, 60.8% had got to college/university, 20.8% went to secondary school, 14.4% were postgraduates, and 3.2% had got too preparatory and 0.8% primary school. In regard to income levels, the majority of the respondents 32.8% earned less than

SAR5,000, 20% earned between SAR 5,000-10,000, 22.4% earned between SAR 10,000-15,000 and 24% earned more than SAR 15,000. The researcher then sought to determine the respondent's health insurance utilization. They were first asked whether they have health insurance for their children, majority of the respondents, 63 (50.4%) said no, and 57 (45.6%) said they had the insurance while 5 (4%) said they were not sure. **Table -1**

The respondents were asked to name the type of health insurance they used. The majority of the respondents 38.4% said they had private insurance, 36% said they had public health insurance, 15.2% had community health insurance, and 6.4% said they had other types of insurance. The respondents agreed that they would use the health insurance card to receive healthcare services when the need arises (mean=3.8871), and they have ever used a health insurance card to receive healthcare services (mean=3.4640). However, the respondents were not sure about the statement "My dependents will use the health insurance card to receive healthcare when the need arises" (mean=3.3360) and "My dependents have ever used a Health insurance card to receive healthcare" (mean=3.1760). The overall fit value shows a $p=0.00$ suggesting strong evidence of increased health insurance utilization suggesting a strong association. Table -1

The researcher then sought to determine the respondent's perception of the majority of health service they have used. Most of the respondents agreed that they were satisfied by the healthcare facilities at the different levels, as the average score was between 3.41 and 4.20 as shown by their positive perception of factors such as waiting times, cleanliness, and relationship with staff. The data also shows an overall fit value whereby the chi-square is 79.600 and $p=0.00$. This suggests that there is a strong link in the respondents being insured and their satisfaction with the utilization of healthcare in KSA. Table -1

Table-1: Demographic Characteristics, Health Insurance Coverage, and Healthcare Utilization among Respondents (N = 125)

Domain	Variable	Category / Item	n	% / Mean	SD
Demographic Characteristics	Gender	Male	68	54.4%	—
		Female	57	45.6%	—
	Age (years)	<18	5	4.0%	—
		18–24	19	15.2%	—
		25–34	33	26.4%	—
		35–44	40	32.0%	—
		≥45	28	22.4%	—
	Nationality	Saudi	122	97.6%	—
		Non-Saudi	3	2.4%	—
	Education level	Primary	1	0.8%	—
		Secondary	26	20.8%	—
		College/University	76	60.8%	—
		Postgraduate	18	14.4%	—
		Primary–preparatory	4	3.2%	—
	Monthly income (SAR)	<5,000	41	32.8%	—
		5,000–10,000	26	20.8%	—
		10,000–15,000	28	22.4%	—
		>15,000	30	24.0%	—
Health Insurance Coverage	Insurance for children	Yes	57	45.6%	—
		No	63	50.4%	—
		Not sure	5	4.0%	—
Type of Health Insurance* Healthcare Utilization & Access (Satisfaction Scores)	Insurance type	Public	45	36.0%	—
		Private	48	38.4%	—
		Community	19	15.2%	—
		Other	8	6.4%	—
	Accessibility to health facilities	—	125	3.80	0.82
	Waiting time (reception/exam areas)	—	125	3.74	0.87

	Cleanliness of facilities	—	125	3.78	0.88
	Doctor's communication & explanation	—	125	3.74	0.90
	Thoroughness of examination	—	125	3.66	0.91
	Accuracy of diagnosis	—	125	3.72	0.85
	Time spent with doctor	—	125	3.76	0.83

*Insurance type calculated among insured respondents only (n = 120).

Overall association between insurance status and healthcare utilization:

$\chi^2 = 79.600$, df = 4, p = 0.00

Discussion

Due to the historic events of diseases and threats in the KSA, all the individuals need health insurance. The country needs an effective and smart healthcare insurance system as the country is within the top fifty in Global Terrorism Index and medium-risk category in the World Risk Report ¹³. Additionally, the pandemic demonstrated how the healthcare system was severely impacted by a lack of COVID-19 behaviors, attitudes, and knowledge ¹⁴. This study has revealed that health insurance can be used to ensure that children in KSA can access and utilize medical services better.

Our study descriptive analysis results show that a significant proportion of respondents (50.4%) do not have health insurance for their children, while 45.6% in the survey have insurance for their children. The study findings showed that a significant proportion have lower income levels, with 32.8% earning less than SAR 5,000. The findings showed that 4% were not sure whether they have insurance for their kids, which indicates a potential lack of awareness or understanding about their insurance status. This relatively small coverage rate in children is also interesting bearing in mind the developmental stage of Saudi Arabia concerning universal health care. The research results were similar to earlier studies that discovered lapses in dependent insurance covers despite good insurance cover among the employed individuals ⁸.

The mixed system of healthcare financing in Saudi Arabia is presented in most of the private insurance (38.4%), then governmental insurance (36%). Past studies have demonstrated the same trends with lower-income families being insured under public insurance and those with higher earnings and employment being widespread under private insurance. This suggests that the level of socioeconomic disparity between children insurance coverage in the Eastern Province has not been eliminated yet ⁸. Also, systematic review stated that the Cooperative Insurance System has minimized the costs, particularly among the private region, and enhanced healthcare access, quality, and efficiency. In order to achieve full Universal Health Coverage, though, there are still barriers like increased premium, infrastructural shortages, and cultural hurdles which have created the need to make more people aware and collaborate with the government ⁹. Our results are also in agreement with national reviews that indicated that insurance coverage was positively associated with male gender, income, more education, better perceived health and better among non-Saudis (72.8%) compared to Saudis (12.1%) ¹⁵.

There was a statistically significant correlation between health insurance and the use of healthcare (p < 0.05). Parents strongly agreed that they would use health insurance to access healthcare services when needed (mean = 3.89), and that they had previously used insurance for healthcare services (mean = 3.46). However, utilization among dependents was comparatively lower. Parents were uncertain whether their children would use insurance when ill (mean = 3.34) or had previously used insurance (mean = 3.18).

International evidence supports the positive impact of child health insurance on utilization. In Jordan, free health insurance for children under six increased coverage by 17 percentage points, resulting in higher hospital visits and greater use of private facilities ¹⁶. Similarly, in Vietnam, free health insurance increased utilization among children aged 6–14 and reduced out-of-pocket costs, while student insurance had a smaller impact ¹⁷. In China, social health insurance for children reduced household impoverishment from illness, particularly among rural, low-income, and infant populations ¹⁸. Policies such as South Korea's 2017 coinsurance reduction for children under 15 increased inpatient costs by 16.2%, admissions by 8.6%, and length of stay by 10.7%, while outpatient costs and visits declined by 9.1% and 6.8%, indicating a substitution effect ¹⁹.

Another study revealed that children in the provinces implementing the policy in 2017 had better BMI-for-age Z-scores ($\beta = 0.194$, p < 0.05) and lower frequency of illnesses ($\beta = -0.097$, p < 0.05), and this increase in the benefits

was strengthened by participation in commercial insurance ²⁰. All of these studies show that child-oriented insurance policies promote health benefits, financial stability and access.

Having a mean score of between 3.1760 and 3.3360 out of 5, the descriptive statistics indicate that the participants generally had good experience about using their health insurance to obtain healthcare services when they are in need. Maximum participants affirmed that they had been using their health insurance cards to cover the medical care and they would use them in the future. It declares that people have positive views regarding the use of health insurance. The overall model fit ($p = 0.00$) is substantial, which confirms that there is a strong dependence between the insurance status and healthcare use and that health insurance plays an important role in facilitating immediate access to healthcare.

As it is consistent with the work of Zhang et al., this study confirms that health insurance policies have improved the quality and accessibility of health care, especially among pilgrims and overseas workers ²¹. Significantly, in Saudi research, insurance children consumed less outpatient treatment (coefficient = -0.107; $p < 0.001$) but children with chronic disorders, women and those who reported poor health consumed more. These findings demonstrate the complicated nature of healthcare consumption, where social and demographic and health factors affect it alongside insurance status. Notably, our research revealed that satisfaction with healthcare services is a strong predictor of the utilization of insurance ¹⁵.

Respondents reported high satisfaction with waiting times, cleanliness, and staff relationships, and this satisfaction was strongly associated with insured service use. These findings are consistent with the study conducted by Ali et al., (2024) that reported a positive correlation between subscriber satisfaction with health services and health insurance coverage. With the advancement in health insurance coverage, subscriber satisfaction is on the incline. They also have satisfied customers with physicians and nurses interactions. Although they feel satisfied with the employee relations and the administrative factors, they are unhappy with the meeting duration with the doctors. They do not like the time that they have to wait and how their questions take a long time to be answered. Based on the survey, the respondents were satisfied with the services provided, their affordability, the scope of the plans, their availability, and insurance premiums, but were entirely displeased by the speed of the operations ²².

According to another trial performed at Aurora General Hospital, Dammam, the implementation of NPHIES showed positive response ²³. In other research, Al-Qahtani and Al-Khmasan found that the health insurance positively influenced the healthcare services in terms of its consistency, incorporation, approachability, and management in addition to the familiarity they had with the healthcare services, procedures, and systems ²⁴. Overall, the findings of our study corroborate existing evidence that health insurance plays a crucial role in enhancing healthcare utilization and satisfaction. However, the relatively low insurance coverage for children highlights persistent gaps that require policy attention.

Although this research illuminates on the impact of health insurance on the access of children to healthcare services in the Eastern Province, it is limited in a number of ways. As a cross-sectional study, it is not able to indicate cause-effect and using parental reports could be somewhat biased. The majority of respondents were Saudi nationalities and a representative of one region and therefore the results might not be representative of other areas and expatriate families. There was a lack of clear information about the real use of services by children. Future studies need to follow families over an extended period, cover a variety of regions, gather data directly based on healthcare records and examine why not all of the children utilize insurance fully.

Conclusion

This research work concluded that health insurance is a significant factor in enhancing access to the healthcare services, and promoting their use by children in the Eastern Province of Saudi Arabia. Insured parents attended more medical visits, and indicated a higher level of satisfaction with the quality of care, which is a key issue in reducing care barriers. But still, a significant percentage of children were uninsured and dependency use was not as high as it should have been, suggesting that there are gaps between insurance coverage and actual use.

References

1. Malaviya S, Bishai D, Soni MM, Suliman ED. Socioeconomic disparities in healthcare utilization under universal health coverage: evidence from Dubai household health survey. *Int J Equity Health*. 2022;21(1):90.
2. Al-luhaym AN, Alshagrawi S. Factors associated with access to the Saudi primary healthcare in light of vision 2030. *Sudan J Med Sci*. 2023;18(3):391–401.

3. Rahman A, Pingali P. Public Health Insurance: Reducing Poverty or Access to Equitable Health Care? The Future of India's Social Safety Nets: Focus, Form, and Scope: Springer; 2024. p. 203-44.
4. Bayarsaikhan D, Tessier L, Ron A. Universal Health Coverage and Social Health Protection: Policy relevance to health system financing reforms. *Int Soc Secur Rev.* 2022;75(2):75-95.
5. Mathauer I, Torres LV, Kutzin J, Jakob M, Hanson K. Pooling financial resources for universal health coverage: options for reform. *Bull World Health Organ.* 2019;98(2):132.
6. McIntyre A, Morein M, Kim J, Figueroa JF, Sommers BD, editors. US Coverage Changes During Medicaid Unwinding in 2023. *JAMA Health Forum*; 2025: American Medical Association.
7. Alasiri AA, Mohammed V. Healthcare transformation in Saudi Arabia: an overview since the launch of vision 2030. *Health Serv Insights.* 2022;15:11786329221121214.
8. Al-Hanawi MK, Mwale ML, Kamninga TM. The effects of health insurance on health-seeking behaviour: evidence from the Kingdom of Saudi Arabia. *Risk Manag Healthc Policy.* 2020:595-607.
9. Alzahrani AA, Pavlova M, Alsubahi N, Ahmad Ae, Groot W, editors. Impact of the Cooperative Health Insurance System in Saudi Arabia on Universal Health Coverage—A Systematic Literature Review. *Healthcare*; 2025: MDPI.
10. Kruk ME, Lewis TP, Arsenault C, Bhutta ZA, Irimu G, Jeong J, et al. Improving health and social systems for all children in LMICs: structural innovations to deliver high-quality services. *Lancet.* 2022;399(10337):1830-44.
11. Narita RE. Consumption of healthcare services in the United States: the impact of health insurance. *J Risk Financial Manag.* 2023;16(5):277.
12. Blumberg SJ, Foster EB, Frasier AM, Satorius J, Skalland BJ, Nysse-Carris KL, et al. Design and operation of the National Survey of Children's Health, 2007. *Vital and health statistics Ser 1, Programs and collection procedures.* 2012(55):1-149.
13. Al-Wathinani AM, Barten DG, Borowska-Stefańska M, Gołda P, AlDulijan NA, Alhallaf MA, et al. Driving sustainable disaster risk reduction: A rapid review of the policies and strategies in Saudi Arabia. *Sustainability.* 2023;15(14):10976.
14. Sheerah HA, Almuzaini Y, Khan A, editors. Public health challenges in Saudi Arabia during the COVID-19 pandemic: a literature review. *Healthcare*; 2023: MDPI.
15. Althabaiti KS, Hunsberger M, Khan J, Ahmed S. Factors Influencing Health Insurance Enrollment and Its Impact on Outpatient Service Utilization in Saudi Arabia: Insights from the National Saudi Family Health Survey. *medRxiv.* 2024:2024.10.17.24315658.
16. Yaylali A. The causal effect of free health insurance policy on the well-being and health care utilisation of Jordanian children. *IJHEP.* 2023;7(4):84-93.
17. Nguyen C. The impact of health insurance programs for children: evidence from Vietnam. *Health Econ Rev.* 2016;6(1):34.
18. Zhou J, Zhan Y, Chen H, Chen S. Does younger children's social health insurance alleviate household impoverishment due to illness? *BMC Health Serv Res.* 2024;24(1):1152.
19. Park M, Park E-C, Noh H, Jang S-I. Impact of Coinsurance Reduction Policy on Healthcare Utilization Among Children Under 15. *J Korean Med Sci.* 2023;38(39).
20. Luo H, Fu J, Xiao M. Effect of medical insurance policy on child health indicators: an empirical test of difference-in-differences model. *Front Public Health.* 2025;13:1559856.
21. Zhang M, Alkharaan A. Health Insurance and Its Role in Enhancing the Overall Quality of Health Care in Saudi Arabia. *Saudi J Humanities Soc Sci.* 2025;10(6):300-13.
22. Mohammed Awadalkarim Almubarak A, Yasir Awadelkarim E, Burai Otman A, Ashwak Saud Abdullah A. The Impact Of Health Insurance On The Quality Of Health Services In Saudi Arabia. *Educ Adm Theory Pract.* 2024;30(10):58-64.
23. Alnajjar MI. The Impact of Unified Medical Insurance System Implementation (Nphies) on Healthcare Service Quality: Applied Research Case Study in Arrawdha General Hospital Dammam, Saudi Arabia. 2024.
24. Al-Qahtani SA, Al-Khmasan MA. The impact of health insurance on the quality of healthcare services in government hospitals in Dammam city. 2023.