

Review Article

National health insurance system for universal health coverage: prospects and challenges in Saudi Arabia

Mohammad F. Alharbi*

Department of Health Administration, College of Public Health and Health Informatics, Qassim University, Qassim, KSA

Received: 28 September 2019

Accepted: 11 October 2019

***Correspondence:**

Dr. Mohammad F. Alharbi,

E-mail: moh.alharbi@qu.edu.sa

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Universal health coverage (UHC) is one of the major health policy objectives to achieve a Nation's sustainable development. This goal is achieved when all citizens in the country enjoy the highest standards of healthcare at no or low cost. Many countries around the world have achieved UHC through a national health insurance framework and have an extensive range of risks funded by government revenue and contributions from both employers and employees. This study examines the feasibility of developing a National Health Insurance System (NHIS) as a way to achieve UHC in Saudi Arabia. It also highlights the potential role of health insurance in health coverage, improving the quality of care, and use of healthcare. Although establishing a NHIS poses many challenges, addressing them makes it feasible to provide and finance healthcare in the country.

Keywords: National health insurance, Universal healthcare, Health finance, Saudi Arabia

INTRODUCTION

The provision of health care services is one of the basic requirements of the individual that leads to the overall development of society. The Saudi government is committed to protecting the health of its citizens by providing health care under Article 31 of the Constitution. Accordingly, the government bears the financial burden of meeting the health care requirements of Saudi citizens. The majority of non-Saudi citizens seeks healthcare paid for by individuals or their employers.¹ The international reduction in oil prices, coupled with the rising costs of medical technologies, and increased demand for free healthcare has heightened the financial pressure on the government in administering healthcare services.

Providing free healthcare to its citizens also led to many inherent problems, such as over-utilization, increasing number of unnecessary referrals and abuse of services.² Moreover, with salaries as the payment mechanism,

health providers have no incentive to control costs or make rational use of resources. There has been limited coordination between government agencies in sharing resources, particularly costly medical equipment and infrastructures.² Despite continued efforts to invest in medical education, the country still depends greatly on non-Saudi citizens who constitute approximately 58 percent of health workforce.³ Further, there are issues related to inequitable access to quality healthcare in public hospitals.^{4,5}

Over time, policymakers have realized that the current pattern of healthcare delivery and financing is neither sustainable nor effective and have considered health insurance as one policy option that could achieve many objectives of the country's healthcare system and relieve healthcare's dependence on government resources.¹ As a result, health insurance reform was introduced in 1999, in which a declaration was issued to establish a cooperative health insurance (CHI) system designed to provide healthcare for private sector workers and their families.

Consequently, the CHI system has been implemented in three stages since 2005. This paper discusses the importance of health insurance as a potential mechanism to achieve UHC in Saudi Arabia. It also analyses the prospects and challenges that may occur in implementing the National Health Insurance System (NHIS) in the country.

This article is based on extensive review of literature conducted to elicit relevant descriptive information on UHC. The major focus was given on the philosophy of UHC, and its potential role on improving coverage of quality services to the entire population using experiences of countries across the world. During the review process the commitments of the kingdom of Saudi Arabia in realizing UHC as reflected in various policy documents including the Vision-2030 and the role of CHI as a way of achieving the UHC are emphasized. As a part of the review of literature, an assessment of relevant publications including documents of WHO, World Bank, organization for economic co-operation and development (OECD), policy documents of government, reports of Ministry of Health, Council of Cooperative Health Insurance and academic articles related to the area of focus were used. The relevant literature thus collected from multiple sources was used as a way of triangulation to give credibility to the analysis. A methodical literature search was conducted through many electronic data base to identify peer reviewed studies on UHC and the Saudi health care system.

HEALTH INSURANCE: IT'S ROLE IN ACHIEVING UNIVERSAL HEALTH COVERAGE

According to the World Health Organization (WHO), UHC exists when everyone in the country receives good quality, low cost health services according to their needs.⁶ This implies that everyone is able to access good quality comprehensive healthcare without facing any of the financial risks associated with seeking services from health providers. Recent experiences in other countries have shown that initiatives taken to improve healthcare coverage have improved the health of populations significantly.⁷ In some countries, these initiatives also have resulted in reducing infeasible health expenditures for families.⁸ Many countries already have achieved UHC, particularly in the OECD, which spends an average of 6.5 per cent of its gross domestic product on health insurance, which constitutes the major share of their spending on health.⁹ It has been indicated that collaboration with the private sector in health coverage has helped these countries maximize UHC's effects.¹⁰

Various countries in Asia initiated the shift to UHC long ago. In 1938, Japan enacted the NHI act to extend health coverage for uninsured poor people and those in underserved rural areas.¹¹ In Thailand, the government subsidizes the premiums for the poor to include them in UHC, while Korea extended the social health insurance coverage to small companies and self-employed

individuals.^{12,13} Further, the Korean government provides full support for medical aid programs for people who cannot contribute to national health insurance.¹⁴ In Turkey, the government subsidizes the contributions of the lower income strata of society.¹⁵ Ghana and Rwanda achieved UHC through community-based health insurance programs as part of a national scheme in which the government subsidizes poorer households.¹⁶

Countries' health financing and delivery systems can be categorized using common features of the Bismarck or Beveridge models, and many health systems in the world use contributions and taxation.¹⁷ Financing through contributions often is preferable, as it leads to the use of health services and fairness in funding.¹⁸ One of the key features of such systems is risk pooling, which enables people to receive health services according to their needs rather than their ability to pay. Traditionally, social health insurance has operated in many countries. Tax-based funding, on the other hand, is simple and effective because of its effect on cost control and its basis upon progressive taxation, which means that people with higher incomes make larger contributions.^{17,19} Voluntary health insurance can offer improved health by providing consumers with choice and the availability of quality care from the best health facilities.

Health insurance is considered a tool for the redistribution of income within the population. In many countries, a public-supported health insurance scheme is an essential part of the social protection of the poor, as it allocates resources from higher income groups to low-income populations; further, there is evidence that health insurance coverage improves healthcare access and use.²⁰ Some studies in developed countries have confirmed that increased health insurance coverage has led to greater access to primary healthcare for the population and testing for non-communicable and lifestyle disorders. Health insurance coverage has led to increased use of medication prescriptions and adherence to such medications. Experience in the United States shows that increased health insurance coverage has improved chronic disease diagnosis, blood pressure control, and decreased depression in patients.²¹⁻²³ Similarly, coverage of treatment for other types of diseases, such as kidney disease, heart failure, and other chronic conditions has increased access to continuous care.^{21,22} Studies also have concluded that health insurance's effect on health and diseases varies according to the type of disease, health delivery system and type of population.

Most countries that have initiated UHC are making efforts to improve the functioning of health systems to meet the growing needs of the aging population.¹⁰ Households with elderly dependents will experience more catastrophic spending for healthcare, which may be 2-3 times higher than households without such dependents.²⁴ Healthcare services always have been a priority sector in Saudi Arabia, and an increasingly aged population and improved life expectancy will create more demand for

health insurance. The number of people over 60 years is predicted to be 25 percent of the total population by 2050.²⁵ This will add further to a tremendous increase in public expenditure on health and the number of age-related illnesses.

ROLE OF HEALTH INSURANCE IN IMPROVING QUALITY OF CARE

Experiences around the world have shown that health insurance results in a remarkable increase in healthcare use; however, it sometimes raises concerns about the quality of healthcare. Studies have revealed that there are issues including inadequate provision of care, long wait times for services and discrimination between paying and insured patients.^{2,26} Although many studies have concluded that quality improvement is one of the critical factors in the success of health insurance, evidence about the improved quality associated with health insurance is mixed. Experiences from some countries indicate that health insurance coverage improved patients' perceptions about their health considerably. Evidences suggest that functional status and self-reported health, including mental and physical health have improved after coverage has been expanded to dependents. Health insurance knowledge and awareness may influence the population's perceived satisfaction. A study among the Latino population on the perceived quality of care revealed that the insured population had a higher perceived quality of care than the uninsured.²⁷ With respect to personal payment by the population, a study in Ghana showed that the insured population incurred significantly lower costs than did the uninsured group.²⁸ A study of service quality among clients of CHI in Saudi Arabia that used gap analysis showed that consumers were satisfied with all aspects of service quality except the dimension of the reliability.²⁹ With a shift in the government's policy, it becomes paramount to maintain reliability in the quality of care and ensure that there are no ethnic differences, demographic, and geographical in the country. Moreover, in the Qassim region of Saudi Arabia, a current study showed that the quality of care is a key factor in customer satisfaction.³⁰

In contrast to the above, a number of studies have asserted that the insured population has a low perception about the quality of their healthcare. A study in Ghana showed that health providers have a negative attitude toward the insured population, which resulted in long wait times for treatment and higher priority for treatment of private paying patients.³¹ Even in the same hospital, the quality of care also differed among patients. A study in Burkino Faso found that health providers tended to reduce physical examinations and diagnostic tests for those registered in the community health insurance system, while no difference was found in the availability of medicines for uninsured and insured populations.³² However, another study in Ghana showed no considerable difference in the technical quality of care among the uninsured and insured populations, but neither

group was satisfied with the attitudes of the clinical staff.³³ These findings were supported by a study in India, which demonstrated that the quality of care patients received was unrelated to insurance status.^{34,35} These results also were supported by a recent study in Ghana that showed that, despite significant differences in financial access, there were no fundamental differences in perceptions of quality between insured and uninsured patients.³⁶

Poor knowledge about the program often leads to lower satisfaction with insurance services. A study in Nigeria showed that clients' general insurance knowledge and awareness about contributions led to greater satisfaction with health insurance.³⁷ Socioeconomic characteristics also may influence clients' satisfaction. In Saudi Arabia, a study of workers' levels of awareness and satisfaction with dental insurance revealed that low income workers were dissatisfied with their dental insurance policies, while awareness was high among older, higher income, highly educated, and married individuals, who sought more dental healthcare because they knew the importance of dental health benefits.³⁸

HEALTH INSURANCE LITERACY FOR IMPROVED COVERAGE

A well-functioning market provides consumers with information about price, quality, heterogeneity of services, etc. that can assist them in making informed decisions. In many other markets, average consumers may have little information, yet the market functions with this limited knowledge. This is also true for healthcare and insurance.³⁹ Limited knowledge and lack of awareness about health insurance contributions, benefit packages, provider networks, etc., can deter individuals from seeking coverage. Even in developed countries, the insured population's knowledge about health insurance is limited. A study of Americans enrolled in private health insurance revealed that only 14 percent of the respondents were able to answer correctly questions about the basic design elements of traditional health insurance, and many of them could not indicate the cost of basic services covered under the traditional plan. Further, 89 percent of them did not know the cost of hospitalization. However, most liked the simplified health insurance design.⁴⁰ In view of varied socioeconomic and cultural differences on the part of clients enrolled in health insurance, it is necessary to provide them with knowledge about health insurance.⁴¹ A recent cross-sectional study of expatriate workers in the private sector in Saudi Arabia showed that their knowledge of insurance benefits is very low. Only 62 percent and 87 percent of the respondents were aware of inpatient and outpatient coverage, respectively, which reflects the importance of developing a policy to improve health insurance awareness among expatriates.⁴²

Awareness about plans available and their coverage also can influence the choice and use of services. A study

conducted in Dutch health systems showed that a decision to switch plans depended on price of the plan, quality of services offered, individuals' age and education, and availability of supplementary insurance.⁴³ The results also showed that, while older people are more concerned with the quality of care, young people are more interested in the price of the health services provided. Highly educated people who searched the information available more efficiently had a significant tendency to switch insurance plans, while availability of supplementary insurance reduced the propensity to switch. A study of uninsured African Americans showed that most had little or no familiarity with the terminology used in health insurance, and for the majority, cost was the key factor in their decision to purchase health insurance.⁴⁴

A recent study in Saudi Arabia on the relations among antecedent factors, such as service characteristics, choice of plan, financing and the satisfaction of expatriate workers covered by the CHI scheme found that antecedent factors were significant predictors of workers' satisfaction with the program.⁴⁵ Another study on the role of service features, customers' knowledge, and the national culture in clients' satisfaction among private sector workers showed a positive relation between health insurance service characteristics, including availability, acceptability, accessibility, and quality, and clients' satisfaction.³⁰ Evidence from the literature also has indicated that health insurance is beneficial to the population, but from the patients' perspectives, it is not important whether it is managed by the private or public sector.

COOPERATIVE HEALTH INSURANCE IN SAUDI ARABIA: PRESENT SCENARIO

The Government of Saudi Arabia has proposed to launch CHI in three stages. The first stage will cover both Saudi and non-Saudi workers in the private sector and their dependents; the second will cover employees and their dependents in the government sector, and the third will cover pilgrims.²⁶ Currently, approximately 7.9 million workers in the private sector (1.04 million Saudis and 6.85 non-Saudis) and 4.05 million dependents (1.71 million Saudis and 2.34 million non-Saudis) are covered.⁴⁶ Although the program was initiated more than a decade ago, coverage of workers in the private sector remains a major challenge. A cross-sectional study of male expatriate workers showed that 30 percent of them had not yet joined the health insurance system or were uninsured, and the study indicated that both workplace and personal characteristics were important factors that affected this situation.⁴² People who are single, less educated, engaged in non-technical work, and those in small companies and agricultural sectors were found to be uninsured. Another study of the characteristics of the uninsured in the Gulf Cooperation Council countries showed that work place status influenced health insurance status.⁴⁷ Companies that employ fewer

workers, expatriates with families, and less educated workers were more likely to offer insurance. Empirical studies also have shown that companies with higher turnover rates are less likely to provide health insurance than are others. Ellis et al showed a positive relation between turnover rates and the decision to give up insurance even after controlling the size of companies.⁴⁸ The study also found that the decision to offer insurance varied significantly with actual turnover rates.

REFLECTION ON THE NATIONAL HEALTH INSURANCE SYSTEM FOR UNIVERSAL COVERAGE

The health problems in Saudi Arabia are typical of those in developing countries, even though it has a unique sociocultural and religious milieu. Like other developing countries, Saudi Arabia has been facing the dual challenges of an increasing demand for healthcare on the one hand and a restriction of resources on the other. The majority of healthcare is provided at no cost at government health facilities, while CHI covers private sector workers. The program has been criticized on several grounds: equity concerns; lack of comprehensiveness, and lack of mutual support and cooperation.² As the current health financing system does not assist in pooling resources and health risks, policymakers should consider the feasibility of developing appropriate health insurance mechanisms in the existing sociocultural context of the country, which can pool resources from the government, employers, and workers. This will make the existing risk pool not only larger, but also could be an effective use of government revenues to enhance the citizens' health. International evidence has shown that health insurance can be an effective tool in achieving health policy objectives.¹⁹

There is strong evidence that expanding health insurance improves access to and use of good care in different ways. It can improve access to care significantly, especially the use of preventive and primary healthcare, treatment for chronic care, and surgery. It also can lead to earlier detection of diseases and better medication and adherence to medications. The evidence also suggests that policies that improve and expand health insurance will produce significant health gains, particularly among low income populations, the elderly and people with chronic conditions.

Similar to other developing countries, health insurance may be diversified and include a range of packages within the system. We need to learn from the experience of countries such as Germany, Denmark and Sweden that have implemented health insurance for different segments of the population and achieved UHC. The government also should examine the model Turkey implemented, which achieved UHC in a short period of time.¹⁰ By implementing a viable health insurance system, the country is likely to save millions of riyals otherwise spent for medical treatment abroad.

In the long term, Saudi Vision-2030 intends to provide quality healthcare to its growing population by engaging the private health sector. This includes designing an appropriate health insurance system, which would not only improve communities' access to health services, but also reduce wait times to receive specialist consultations and surgery. An effective health insurance system should be able to provide consumers with choice between different insurance options and help them make healthcare decisions with appropriate understanding. In this context, the vision intends to promote transparency and competition among public and private health providers, which would offer the population opportunities for increased choice of treatment facilities. Further, the vision promotes making healthcare corporate with the intention of creating specialized medical care so that people can select health providers of their choice.

With respect to pooling funds, contributions from employers, workers and government subsidies for the poor (including government contributions for group insurance programs for government employees) should be grouped broadly to enable cross-subsidization from high income to low income groups and from the healthy to the sick. There is no doubt that the huge proportion of healthy, young people in Saudi Arabia would make the risk pool more beneficial for the sick and unhealthy populations through cross-subsidization. Countries with multiple health insurance programs face the problems of fragmentation of risk pools, high administrative costs, and inefficiency. Thus, it is essential to consolidate existing programs for large risk pooling by establishing a NHIS and institutional arrangements should be viable to develop infrastructure to achieve optimum expansion throughout the country. It is equally important to monitor the functions of insurance companies to protect the interests of the people. The NHIS implies a major policy shift that requires extensive reorganization of the current healthcare system both in the private and public sectors with the objective to enhance access to affordable quality services based on population needs. It also requires the existing health financing system to be revamped. To sustain healthcare financing, experiences suggest that a national health insurance fund (NHIF) may be established to administer the revenue for the system.

Experiences from other countries have shown that implementation of a NHIS will face many challenges.^{10,19} Firstly, collecting contributions from smaller businesses, the self-employed and workers in the informal sector will be a problem, particularly when dependents of these workers are covered. In such a context, mandatory enrollment may not be feasible. If the insurance is made voluntary, there may be a problem of adverse selection, in which the poor and the sick will join the program, thus making it financially unsustainable.¹⁸ Moreover, the administrative cost of implementing the program will be high. Secondly, classifying, endorsing and providing subsidies to the poor will be a problem in many low-income countries. However, in the Saudi Arabian context,

this is not a challenge because there are fewer lower income people and the government has the capacity to subsidize, monitor and evaluate such programs. Thirdly, improving access to quality care at all levels by improving the selection of service providers and contracting health services will be a challenge. An effective provider's payment mechanism like capitation should be encouraged so that the financial risk of delivering healthcare will be shifted to the providers. Fourthly, the benefit package must be determined in accordance with the costs and the premium contribution, which demands accurate data and technical skills.

To provide comprehensive health benefits, the entire health system needs to be revitalized to include prevention, health promotion, treatment and rehabilitation through increased capacity to meet the system's future requirements. Secondly, it is necessary to provide incentives to healthcare providers in both the public and private sectors to improve their performance as well as patients' satisfaction. Thirdly, health system workforce requirements at all levels need to be addressed. This requires planned investment in medical education in both the private and public sectors. As a preliminary step, it is imperative to have a consultation about the proposed initiatives with key stakeholders and a dialogue with policymakers, health providers, insurance companies, private health sector representatives, and the civil society.

Finally, citizens' health insurance literacy is a critical issue. With the availability of a range of health insurance products, individuals will find it difficult to select health insurance because of the complicated nature of the product, and a lack of skills and knowledge to select the optimal choice.⁴⁹ Given that consumers have varied socioeconomic characteristics, it would be appropriate to develop educational opportunities focused on literacy about health insurance.⁴¹ There also is a need to educate people about the benefits and principles of insurance and health insurance that in no way conflict with people's social and religious standings in the country.

CONCLUSION

Global experiences have revealed that health insurance plays a key role in extending the health coverage of countries' populations. Saudi Arabia's Vision-2030 emphasizes the role of health insurance in providing its population with high quality care through an appropriate health insurance mechanism. CHI already has proven to be an effective mechanism for health coverage of private sector workers. By establishing a NHIS, the country can pool its resources from the public and private sectors, thereby making a larger risk pool that leads to support from healthy people to the sick, the rich to the poor and the young to the old. There is a range of approaches available to achieve UHC, but the optimal selection should be based on the unique needs and context of the country. Optimum expansion of health infrastructure, reorganization of the existing health system, and viable

institutional arrangements are paramount in achieving UHC. Further, health insurance literacy on the part of the population needs to be improved to facilitate correct choices. Most importantly, we need to learn from the experiences of other countries that have already achieved UHC through health insurance.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Khaliq A. The Saudi healthcare system: a view from the Minaret. *World Health Popul*. 2012;13:52-64.
2. Walston S, Al-Harbi Y, Al-Omar B. The changing face of healthcare in Saudi Arabia. *Ann Saudi Med*. 2008;28:243-50.
3. Ministry of Health. General Directorate of Statistics and Information, Health statistic book. Riyadh (KSA): Ministry of Health; 2014. Available at: <https://www.moh.gov.sa/en/Ministry/Statistics/book/Documents/Statistical-Book-for-the-Year-1435.pdf>. Accessed on 3 November 2018.
4. Al-Sharqi OZ, Abdullallah MT. Diagnosing Saudi health reforms: Is NHS the right prescriptions?. *Int J Health Plann Mgmt*. 2013;28:308-19.
5. Alborie HM, Damanhoury AMS. Patients' satisfaction of service quality in Saudi hospitals: a SERVQUAL analysis. *Int J Healthcare Quality Assurance*. 2013;26:20-30.
6. World Health Organisation. World Health Report 2010. Health systems financing: the path to universal coverage. Geneva: WHO; 2010. Available at: <http://www.who.int/whr/2010/en>. Accessed on 15 November 2018.
7. Moreno-Serra R, Smith P. Does progress towards universal health coverage improve population health? *Lancet*. 2012;380:917-23.
8. Knaul FM, Gonzalez-Pier E, Gómez-Dantes O, Garcia-Junco D, Arreola-Ornelas H, Barraza-Lorens, et al. The quest for universal health coverage: achieving social protection for all in Mexico. *Lancet*. 2012;380:1259-79.
9. OECD. Fiscal sustainability of health systems: bridging health and finance perspectives. Paris: OECD Publishing; 2015.
10. OECD. Universal health coverage and health outcomes. Paris: OECD; 2016.
11. James CD, Bayarsaikhan D, Bekedam H. Health financing strategy for WHO's Asia-Pacific Region. *The Lancet*. 2010;375:1417-19.
12. Evans D, Elovainio R, Humphreys G. World Health Report 2010. Health Systems Financing: the path to universal coverage. Geneva: WHO; 2010. Available at: <http://www.who.int/whr/2010/en/>. Accessed on 12 November 2018.
13. OECD. OECD reviews of health care systems: Korea. Paris: OECD Publishing; 2013.
14. Mathauer Xu, Carrin G, Evans DB. An analysis of health financing system of the Republic of Korea and option to strengthen health financing performance. Geneva: WHO; 2009.
15. Paris V, Hewlett E, Auraaen A. Health care coverage in OECD countries in 2012. OECD Health working papers. Paris: OECD publishing. <http://doi.org/10.1787/5jlz3kbf7pzv-en>.
16. OXFAM. Universal health coverage. Why health insurance schemes are leaving the poor behind. OXFAM briefing paper; 2013: 176. Available at: https://www.oxfam.org/sites/www.oxfam.org/files/bp176-universal-health-coverage-091013-en_.pdf. Accessed on 13 November 2018.
17. Bagat M, Mihanovic D, Hrzic M. Public expenditure on health through additional health insurance. Croatia: 11th International Scientific Conference on Economic and Social Development-Building Resilient Society Zagreb; 2015.
18. Hsiao W, Shah R.P. Social health insurance for developing countries. World Development Studies, The World Bank, 2007. Available at: https://cdn1.sph.harvard.edu/wp-content/uploads/sites/100/2012/09/hsiao_and_shaw_2007_-_shi_for_developing_nations.pdf. Accessed on 17 November 2018.
19. World Health Organization. Arguing for universal health coverage, World Health Organization. Geneva; 2013. Available at: http://www.who.int/health_financing/UHC_ENvs_BD.PDF. Accessed on 29 October 2018.
20. Sommers BD, Gawande AA, Baicker K. Health insurance coverage and health-what the recent evidence tell us. *New Eng J Med*. 2017;377:586-93.
21. Torres H, Poorman E, Tadepalli U, Schoettler C, Fung CH, Mushero N, et al. Coverage and access for Americans with chronic disease under the Affordable care act: a quasi-experimental study. *Ann Intern Med*. 2017;166:472-79.
22. Sommers BD, Gunja MZ, Finegold K, Musco T. Changes in self-supported insurance coverage, access to care, and health under the affordable care act. *JAMA*. 2015;314:366-74.
23. Sommers BD, Maylone B, Blendon RJ, Orav EJ, Epstein AM. Three-year impacts of the affordable care act: improved medical care and health among low-income adults. *Health Aff*. 2017;36:1119-28.
24. Palmer MG. Inequalities in universal health coverage: evidences from Vietnam. *World Development*. 2014;64:384-94.
25. Abusaaq HI. Population aging in Saudi Arabia, Saudi Arabian Monetary Agency working paper, WP/15/2/, February, 2015. Available at: <http://www.sama.gov.sa/enUS/EconomicResearch/WorkingPapers/population%20aging%20in%20saudi%20arabia.pdf>. Accessed on 17 November 2018.
26. Almalki M, Fitzgerald G, Clark M. Health care system in Saudi Arabia: An overview. *East Mediterr Health J*. 2011;17(10):784-93.

27. Perez D, Ang A, Vega WA. Effects of health insurance on perceived quality of care among Latinos in the United States. *J Gen Intern Med*. 2009;24:555-60.
28. Nguyen H, Rajkotia Y, Wang H. The financial protection effect of Ghana national health insurance scheme: evidence from a study in two rural districts. *Int J Equity Health*. 2011;10:9-10.
29. Ishfaq M, Qadri FA, Abusaleem KS. Measuring quality of service from customer's perspectives: a case of healthcare insurance in Saudi Arabia. *Health Sci J*. 2015;10:1-11.
30. Alharbi MF. An empirical analysis of customer satisfaction with cooperative health insurance in Saudi Arabia: the role of customer knowledge, service characteristics, and national culture. *Int J Health Sci Res*. 2017;7:234-46.
31. Dalinjong PA, Laar AS. The national health insurance scheme: perceptions and experiences of healthcare providers and clients in two districts of Ghana. *Health Econ Rev*. 2012;2(1):13.
32. Robyn PJ, Hill A, Liu Y, Souares A, Savadogo G, Sie A, et al. Econometric analysis to evaluate the effect of community based health insurance on reducing informal self-care in Burkina Faso. *Health Policy Plan*. 2012;27:156-65.
33. Jehu-Appiah C, Aryeetey G, Agyepong I, Spaan E, Baltussen R. Household perceptions and their implications for enrolment in the national health insurance scheme in Ghana. *Health Policy Plan*. 2012;27:222-33.
34. Devadasan N, Criel B, Van Damme W, Lefevre P, Manoharan S, Van der Stuyft P. Community health insurance schemes & patient satisfaction-evidence from India. *Indian J Med Res*. 2011;133:40-9.
35. Bauchet J, Dalal A, Mayasudhakar. Can insurer improve healthcare quality? Evidence from a community microinsurance scheme in India. New York; NYC and Financial Access initiative; 2010.
36. Abuosi AA, Domfeh KA, Abor JY, Amponsah EN. Health insurance and quality of care: comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. *Int J Equity Health*. 2016;15:1-11.
37. Mohammed S, Sambo N, Dong H. Understanding client satisfaction with a health insurance scheme in Nigeria: factors and enrollees experiences. *Health Res Policy Systems*. 2011;9:1-9.
38. Halawany HS, Alhussainan NS, Alghanem AS, Farrash FA. An assessment of the awareness and satisfaction concerning dental insurance among employees in Riyadh, Kingdom of Saudi Arabia. *Pakistan Oral Dent J*. 2011;31:402-8.
39. Schansberg DE. The economics of health care and health insurance. *The Independent Review*. 2014;18:401-19.
40. Loewenstein G, Friedman J, McGill B, Ahmad S, Linck S, Sinkula S, et al. Consumers misunderstanding of health insurance. *J Health Economics*. 2013;32:850-62.
41. Bartholomae S, Russal MB, McCoy T. Building health insurance literacy: evidence from the smart choice health insurance program. *J Fam Econ Iss*. 2016;37:140-55.
42. Alkhamis A. Knowledge of health insurance benefits among male expatriates in Saudi Arabia. *Saudi Med J*. 2017;38:642-53.
43. Boonen LH, Aldershof TL, Schut FT. Switching health insurers: the role of price, quality and consumer information search. *Eur J Health Econ*. 2016;17:339-53.
44. Politi MC, Kaphingst KA, Kreuter M, Shacham E, Lovell MC, McBride TD. Knowledge of health insurance terminology and details among the uninsured. *Med Care Res Review*. 201;71:85-98.
45. Aldosari A, Ibrahim Y, Manab MBA. Linking cooperative health insurance service characteristics to expatriates' satisfaction: mediating role of customer knowledge. *Int Review Manag Market*. 2016;6:1013-9.
46. Council for Cooperative Health Insurance, Saudi Arabia, 2017. Available at: <http://www.cchi.gov.sa/en/pages/default.aspx>. Accessed on 10 December 2018.
47. Alkhamis A, Hassan A, Cosgrove P. Financing healthcare in gulf cooperation council countries: a focus on Saudi Arabia. *Int J Health Plann Mgmt*. 2014;29(1):64-82.
48. Ellis PR, Albert C. Health insurance, cost expectations and adverse job turnover. *Health Economic*. 2011;20:27-44.
49. Kim J, Braun B, Williams AD. Understanding health insurance literacy: a literature review. *Fam Consumer Sci Res J*. 2013;42:3-13.

Cite this article as: Alharbi MF. National health insurance system for universal health coverage: prospects and challenges in Saudi Arabia. *Int J Community Med Public Health* 2019;6:5006-12.