

## Association between demographic characteristics and health status of uninsured expatriate workers in Saudi Arabia

Abdulwahab A. Alkhamis<sup>1</sup> and Shaima S. Ali Miraj<sup>2\*</sup>

<sup>1</sup>Supervisor Public Health Department and University Branches Department of Public Health, College of Health Sciences, Saudi Electronic University, PO Box 93499 Riyadh, 11673 Saudi Arabia

<sup>2</sup>Assistant Professor, Department of Public Health, College of Health Sciences, Saudi Electronic University, PO Box 93499 Riyadh, 11673 Saudi Arabia

### ABSTRACT

Health insurance in Saudi Arabia is characterized by serious reforms, as the country has undergone major expansion of its healthcare system. Despite enormous positive developments like introduction of compulsory health benefit scheme for all, healthcare is still in its nascent stage in the Kingdom and little is known about user demographics of the uninsured expatriate workers and its association with their health status. The present study has attempted to highlight the impact of certain key demographic factors such as age, educational level, nationality and language proficiency on the health status of non-insured expatriates working in Saudi Arabia. A cross-sectional survey with a multi-stage stratified cluster sampling technique was used with verified questionnaires. Our findings indicate that important characteristics such as age, education, nationality and language, are associated with an individual's health status. The analysis of these demographic factors impacting health insurance of expatriates will help in determining successful and beneficial working of health insurance and its accessibility with regard to ever increasing expatriate participation in future.

**KEY WORDS:** DEMOGRAPHIC, CHARACTERISTICS, UNINSURED, EXPATRIATES, SAUDI ARABIA

### ARTICLE INFORMATION:

\*Corresponding Author: [s.miraj@seu.edu.sa](mailto:s.miraj@seu.edu.sa)

Received 28<sup>th</sup> Nov, 2016

Accepted after revision 27<sup>th</sup> Dec, 2016

BBRC Print ISSN: 0974-6455

Online ISSN: 2321-4007



Thomson Reuters ISI ESC and Crossref Indexed Journal  
NAAS Journal Score 2015: 3.48 Cosmos IF : 4.006

© A Society of Science and Nature Publication, 2016. All rights reserved.

Online Contents Available at: <http://www.bbrc.in/>

## INTRODUCTION

Not long ago, the World Bank supported the extension of role of private health insurance in many developing countries. As a result, some employers in these countries provide health insurance as a tool to attract professional workers. Saudi Arabia attracts a large number of additional expatriates, both skilled and unskilled, in the hope of seeking employment for financial security. Literature suggests that expatriates have increased health risks related to leaving their home countries, (Sekhri and Savedoff 2005, Sommers et al 2012 and Baicker, 2013). Of late, there has been a resurgence in the role of private health insurance companies in providing better services to their clients, as in most high and middle income countries they are now required to provide supplementary or complementary coverage to primarily, social or national health insurance systems, with the exception of the United States, (Bassett and Kane 2007, Thomson et al 2009, Levy and Janke 2016, Alkhamis et al 2014, Alkhamis 2016 and Safi 2016).

In a time when global disease burden is immense, health insurance provides valuable risk coverage against expenditure caused by any unforeseen medical emergencies. Having health insurance is important for several reasons, though these may vary in both developed and developing economies. It is the poor and most vulnerable who are at greatest risk owing to lack of protection against the impoverishing effects of illness. People who are uninsured are more likely to have worse health outcomes, delayed access to care and are more likely to receive less medical care than the insured ones. Health care providers do not care about the uninsured people due to financial implications (Bassett and Kane, 2007 and Thomson et al 2009).

The role of private health insurance in access to healthcare varies among developing and developed countries, and has been deliberated in different surroundings (Thomson et al 2009; Schoen et al 2010. Doherty 2011, Berkhout and Oostingh, 2008; Drechsler and Jütting 2005; Islam 2007 and Smith, 2007).

Saudi Arabia shares characteristics of both high and low-income countries as recently Alkhamis (2012) and Alkhamis et al (2014) have reported. It has attempted to seriously reform its private healthcare system and reduce expatriate access to government resources through the provision of Compulsory Employment Based Health Insurance (CEBHI). CEBHI was announced in 1999; however, it could not be implemented until 2006, when it was carried out in phases according to company size, similar to the plan used for implementing compulsory healthcare in Korea (Jeong and Niki, 2012). Consequently, by November 2008, all companies had to provide health insurance to their employees regardless

of their company's size and could not renew their workers residency permit unless they were insured (Cabinet of Ministers, 1999). Despite widespread adoption of this policy, employer provided healthcare is still in its nascent stage in the Kingdom, knowledge of controlling factors becomes vital to determine the successful expansion of employer-provided healthcare and its funding, (Alkhamis et al 2014, TCCHI 2009, Gallagher 2002, Alkhamis 2016 and Safi 2016).

As there is no data-based information regarding the demographic characteristics of uninsured expatriate workers working in the Kingdom, the present study has been attempted to identify the important demographic associations of the uninsured expatriates, in context to their health status by means of utilization of health services by them. Lack of awareness is a major factor of the low acceptance of health insurance. Thus, an increase in awareness of the expatriates, with more information on demographics, would be vital for proper dissemination of health insurance and its associated benefits in future. Earlier studies elsewhere have highlighted the association between low health literacy and age, race, language and education, (Kunter and White 2003, Levy and Janke 2016, McCormack 2009, Paez et al 2014, Quinn et al 2000, Agency for Healthcare Research and Quality 2009, Short 2004, The Economist 2014, Kenney et al 2010, Health Insurance Coverage in the United States 2013).

It is pertinent to state that understanding of demographic characteristics constitutes one of the most important pillars of any successful healthcare model. The expatriate population in Saudi Arabia is unique because not only does this population dominate the private sector, but expatriates in Saudi Arabia are also young, have limited education and face more health problems despite having health insurance because of a lack of awareness of its proper benefits United Nations, World Population Prospects, 2008; Ministry of Labour Riyadh, 2009 and Alkhamis et al 2014).

In this paper we present the results of a cross-sectional survey conducted on a representative sample of uninsured expatriate workers belonging to different trades in Riyadh, the capital of Saudi Arabia. This investigation of their health insurance status along with its associations with demographic factors was conducted out of public interest and to gain important information on the lacunae for low penetration of health insurance in expatriates.

## METHODOLOGY

To test the outcomes, verified questionnaires were given to the uninsured expatriate population working in companies representing nine different trades, namely agri-

culture, mining, industry, construction, transportation, financial services, personal services, trade, and electricity. All companies that provide healthcare-oriented services such as hospitals, clinics, eye doctors, and pharmacies were excluded. Economic sector/industry classification was based on the third revision of the International Standard Industrial Classification (ISIC) of all economic activities, which has been used to standardise the collection and reporting of statistics (Ministry of Labour Riyadh, 2009; Health Insurance Coverage in the United States, 2013). To determine the sample size, a multistage stratified sampling method was used for the employee population working in the above-mentioned industries. The study stratification was based on business type, company size and number of employees. The companies' size and economic sectors were randomly selected from the Ministry of Labour database; these names were concealed and coded. The code of the companies was known only to the Manager of the Statistics Department of the Ministry of Labour.

The participating companies identified from this database were registered in Riyadh. Riyadh was selected because it represented more than one third of the expatriate population working in Saudi Arabia (Ministry of Labour Riyadh, 2009). It has a population of over 5.0 million, from which a total of 4,737 participants were selected. The expatriate workers belonged to countries from the Asian subcontinent including India, Pakistan, Bangladesh, Sri Lanka, and the Philippines; Arab nations including Egypt, Yemen, and Africa; and Western countries. They were selected randomly, representing a homogenous group. The present study included only male expatriates working in the private sector. Female expatriates, the elderly and children were excluded from the sample because men dominate the expatriate workforce in the private sector (98.30% of all expatriates in the private sector).

The questionnaire was adapted from the Medical Expenditure Panel Survey (MEPS), and was translated into six dominant expatriate languages, namely Urdu, Hindi, Bengali, Malayalam, Arabic and English (Agency for Healthcare Research and Quality, 2009). The total sample size was 4,737, out of which 4,575 responded to the questionnaire prepared, as per standard protocol of MEPS. Among the 4,575 respondents, 1,370 were uninsured and 3,205 were insured. In the current study, sample size of 1370 uninsured was used. The selected questionnaire had comparable sections on parameters representing demographic factors such as age, education, nationality, marital status and language proficiency measured for stating difference among the uninsured expatriate population across various segments. Similarly outcome measures for health service utilization characteristics included Medicare, visit to clinic in

last one year, hospitalization in last one year or above, reimbursement for payment made and percentage of reimbursement to evaluate the differences among various demographic characteristics of the uninsured sample population. In the present study, frequencies and percentages were calculated for the responses collected from these uninsured respondents. Statistical Package for the Social Sciences (SPSS) software version 16.0 was used to analyse the coded data.

## RESULTS

The average age of the study population was 36 years. It was found that an average 22.2 % of the expatriates were less than 30 years old. The maximum number of employees found was in age group of 31 to 40 years with a frequency distribution of 46.3%. It was also observed that in the age group of 50 years and older, the percentage of insured expatriates two times greater than that of the uninsured (Table 1).

Comparing the categories on basis of educational qualification among uninsured individuals from the sample population, it was found that 74% of the interviewed people were either illiterate, had elementary level education or had education up to higher secondary level. In comparison people having technical diploma/graduation or above were only 26%. The data based on nationality demonstrated that majority of expatriates were non-Arabs (69%) maximum being from Bangladesh, followed by India and Pakistan. Among the Arab origin expatriate population, majority of them were from Egypt, followed by Yemen (Table 1).

On analysing the criteria for language proficiency, it was observed that 93% of the sample uninsured population was comfortable speaking in Arabic. Comparing the same for English as a medium of communication, just 33% were proficient in it (Table 1). Comparing the marital status among the uninsured people it was found that 82% were married, with about 71.3% were living without their family. The uninsured expatriates were then compared on the basis of certain outcome measures based on the utilization of health services. The two most important criteria among the demographical factors, age and educational qualifications were compared to evaluate their influence on five important variables representing health services utilization namely: medical care, number of clinical visits in a year, number of hospitalizations in a year, whether reimbursed for expenses made for hospitalization and percentage of reimbursement made for the same. Interesting observations were noticed. On comparing the medical care, just 12.2% of the subjects confirmed of seeking medical care. Among them, 57.2% belonged to 31 to 45 years of age, followed

Table 1: Socio-demographic characteristics of uninsured expatriate employees working in Riyadh, KSA.

Demographic Characteristics	Uninsured Expatriates n = 1370
Age (in years)	No. (In Percentage)
18-30	303(22.2%)
31 - 40	635(46.3%)
40- 50	367(26.8%)
51- 60	58(4.2%)
60+	7(0.5%)
Education Level	
Illiterate	14(1%)
Elementary	463(33.8%)
Up to Secondary /HS schooling	536 (39.1%)
Technical Diploma/Graduate	340 (24.8%)
Post Graduate and Above	17(1.2%)
Nationality (Non-Arab Nations)	
India	351(25.6%)
Bangladesh	402(29.3%)
Pakistan	141(10.5%)
Philippines	20(1.4%)
Others	60(4.4%)
Total (In No.)	974
Arab Origin Nations	
Egypt	216(15.7%)
Yemen	63(4.6%)
Other Arabs	117(8.5%)
Total (In No.)	396
Language Proficiency (Comfortable in conversing)	
Arabic	1276 (93%)
English	451 (33%)
Marital Status	
Unmarried/ Divorced/Widower	247 (18%)
Married with family in KSA	146 (10.7%)
Married without family in KSA	977 (71.3%)
TOTAL	1370

by 27.1 % people seen from the younger age group of less than 30 years followed by 16% seen in people with age group > 45 years (Table 2).

On evaluating frequency of visits to medical clinics in a year, it was observed that 39% among the uninsured sample size of 1370, never visited any clinic over one year or more for treatment in comparison to 61% who went to clinic to seek treatment. Comparing the same on the basis of the age group, interesting observations were seen. When evaluated for clinical visits less than 6

months, maximum number of visits were observed in 31 to 45 years age group, followed by younger people. Similar trends were observed in clinical visits made between 6 to 12 months and > 1 year time period as well (Table2).

Another significant observation made was that among the 1370 sample population, across all age groups, 28.7% people affirmed on visiting clinic only after more than one year or more. In comparison, 17.8% visits were made between 6 to 12 months, followed by 14.3% visits made before 6 months. On evaluating the outcome of hospitalization, it was found that 32.2% responded to have sought it. Among them, maximum people to have undertaken hospitalization were from 31 to 45 years (Table 2).

Similarly when evaluated for reimbursement made for treatment, a majority of 57.6% people among the insured sample population confirmed to have been reimbursed for payment made, with maximum percentage (62.8%) being between 31 to 45 years of age. Similarly on evaluating for percentage of payment, 57% of the uninsured people received partial payment as compared to full amount reimbursed for the payment made for hospitalization/ treatment, (Table 2).

On comparing the outcome measures on the basis of educational qualifications of the uninsured expatriates, it was observed that 57.7% people who were hospitalized had up to higher secondary educational qualifications in comparison to 26.3% people hospitalized who had higher qualifications. Comparing the same on the basis of reimbursement made for treatment, full reimbursement was found in 51.3% having higher qualifications. Similarly even among partial reimbursement made, 47.8% people having higher qualification fared better than their counterparts, (Table 3).

## DISCUSSION

In the entire Middle East region, comprising of the major six GCC countries, the evidence related to health insurance is very scanty because of lack of research in this area. Our study provides estimates of the important demographic characteristics associated with the health status of expatriates. We have tried to examine the involvement of age, qualifications, language and nationality of the uninsured expatriates for seeking health benefits by utilization of services. Therefore, the present work contributes significantly by providing relevant information that can be used by health policy makers. Among the uninsured sample population, the middle-age group (30 – 50 years) was in majority representing 73% of the sample size without having insurance which interestingly was also the one having up to secondary level (representing nearly 72%). These lower levels of education level among these respondents

Table 2: Frequency distribution of uninsured expatriates according to age with certain outcome measures.

	AGE GROUPS	18-30	31-45	45-60	>60	Total
OUTCOME MEASURES						n=1370
Medical care sought	NO (87.8%)	320 (26.5%)	771 (64%)	109 (9.05%)	4 (0.33%)	1204
	YES (12.2%)	45 (27.1%)	95 (57.2%)	25 (15.06%)	1 (0.60%)	166
CLINIC VISITS PER YEAR	NEVER (39%)	198 (37%)	291 (54.3%)	45 (8.4%)	1 (0.1%)	535
	<6 MONTHS(14.3%)	53 (26.9%)	128 (64.9%)	15 (7.6%)	1 (0.5%)	197
	6-12 MONTHS (17.8%)	38 (13.93%)	176 (72.13%)	29 (11.8%)	1 (0.4%)	244
	>1YEAR (28.9%)	76(19.2%)	271(68.7%)	45(11.4%)	2 (0.5%)	394
HOSPITALIZATION PER YEAR	NO (67.8%)	274 (29.4%)	562(60.4%)	90 (9.7%)	3(0.3%)	929
	YES (32.2%)	91(20.6%)	304 (68.9%)	44(9.9%)	2(0.4%)	441
REIMBURSEMENT	NO (42.4%)	31(16.5%)	145(78.05%)	10(5.3%)	2(1%)	188
	YES (57.6%)	60(23.7%)	159(62.8%)	34(13.4%)	0 (0%)	253
% OF REIMBURSEMENT	FULL (43%)	23(21.1%)	74 (67.8%)	12(11%)	0 (0%)	109
	PARTIAL (More than 50%) (36.3%)	20(21.7%)	58(63%)	14(15.2%)	0 (0%)	92
	PARTIAL (Less Than 50%) (20.7%)	17(32.6%)	27(51.92%)	8 (15.3%)	0 (0%)	52

possibly might have contributed to a reduced awareness of healthcare options, which in turn led to their greater percentage of population having no insurance coverage.

This probably draws attention towards two vital issues representing, issue of health literacy and secondly the mind-set. The issue of not seeking health insurance

which was among 22% which were less than 30 years could be highlighted from the fact that probably, since they been young, feel health insurance is not for them. However, the same could not be said for the middle aged respondents, since these people probably, avoided opting for medical care thinking that there are no issues

Table 3: Frequency distribution of uninsured expatriates according to their educational qualifications with outcome measures.

	Educational Qualification	Illiterate	Elementary	Upto HS	Diploma/ Graduate & Above	TOTAL
Outcome Measures						n=1370
Medical care	NO (87.8%)	10 (0.83%)	399 (33.1%)	476 (39.5%)	319 (26.4%)	1204
	YES (12.2%)	4(2.4%)	64(38.5%)	60 (36.1%)	38(22.8%)	166
WENT to CLINIC in LAST 1 YEAR	NEVER (39%)	7(1.3%)	191(35.6%)	204 (38%)	134(25%)	536
	<6 MONTHS(14.3%)	1(0.5%)	66(33.6%)	73(37.2%)	56(28.5%)	196
	6-12 MONTHS (17.8%)	1(0.4%)	74(30.3%)	110(45.1%)	59(24.2%)	244
	>1YEAR (28.9%)	5(1.26%)	132(33.5%)	149(37.8%)	108(27.4%)	394
HOSPITALIZED IN LAST 1 YEAR	NO (67.8%)	12(1.29%)	323(34.7%)	353 (37.9%)	241(25.9%)	929
	YES (32.2%)	2(0.5%)	140(31.7%)	183(41.4%)	116(26.3%)	441
REIMBURSEMENT	NO (42.4%)	2 (1.06%)	100 (53.19%)	58 (30.85%)	28 (14.8%)	188
	YES (57.6%)	0 (0%)	87(34.3%)	94(37.1%)	72(28.4%)	253
% OF REIMBURSEMENT	FULL (43%)	0 (0%)	8 (7.3%)	45(41.2%)	56 (51.3%)	109
	PARTIAL (More than 50%) (36.3%)	0(0%)	22(23.9%)	26(28.2%)	44(47.8%)	92
	PARTIAL (Less Than 50%) (20.7%)	0 (0%)	9 (17.3%)	32(61.5%)	11(21.1%)	52

with their health, though it may be vice versa. At the same time, stark differences in health coverage were observed in the various age groups. In earlier studies it has been reported that overall health care expenses and insurance coverage, both increased with age, (Quinn et al 2000, Short 2004 and The Economist 2014).

However, in our investigation, it was just the reverse. Among the uninsured, even as age progressed the utilization of health services did not increase. This could be possibly due to the fact that the large number of expatriates who work in the kingdom had to have sound health to continue to work. Despite the increasing age, they might feel no major health issues because of financial reasons or deliberately do not want to report. In our analysis, it was also found that the younger age group opted less healthcare in comparison to the middle aged.

This view is consistent with the recent research of Levy and Janke (2016) and that of McCormack, (2009). It has been observed that usually, young people would think and feel to have no health issues as compared to middle or older age groups. In our study, it was observed that irrespective of being young, they opted for more healthcare as compared to the older population. This may be due to the fact that older age group being in minority, had low health literacy; and thus probably would have lacked adequate awareness (McCormack, 2009; Paez et al 2014, United Nations World Population Prospects 2008).

The existing literature clearly reveals that the insurance status of subjects varies by age. In an earlier study, it was found that young adults represented the largest percentage of Americans not covered by a health insurance plan (Kunter and White 2003 and Paez et al 2014). It was also shown by a 2004 Joint Economic Committee study, that young adults between the ages of 18 and 24 are about 30% less likely to be insured than the rest of the population, and the chances of being insured increase as a person ages (McCormack, 2009).

According to Carper and Beauregard's MEP survey conducted in the United States in 2009, age plays a major factor in whether a worker has health insurance. Young adults aged between 19 and 23 years old were more at risk of being uninsured than any other age group. Additionally, these investigators stated that workers under the age of 35 were significantly more likely than older workers to be uninsured all year. Another very strong aspect which was revealed from our study was that irrespective of the age, the education level of a person could play important influence on health insurance. The data of the present study, with regard to educational qualifications, showed that 70%-80% of the expatriate population, irrespective of insurance category had completed up to higher secondary schooling. The percentage of illiterate participants was extremely low (<2%).

Carper and Beauregard's report (Carper and Beauregard 2009), also states that educational attainment has a substantial impact on worker's health insurance status. Lower levels of education were found to be associated with being uninsured all year in workers 19-64 years of age or decreased utilization of health services. Workers who had less than a high school education were about twice as likely as those who attended at least some college to be uninsured all year. Earlier studies have found factors affecting service utilisation ranged from cultural and socio-demographic factors, physical accessibility and disease patterns to perception of quality of services and confidence in care (The Economist, 2014). In our study the impact of educational qualification of uninsured expatriates was evaluated for healthcare utilisation. On evaluating the data for the reimbursement made for treatment/hospitalization, it was found that the percentages of reimbursement made in highly qualified uninsured expatriates was significantly higher from those uninsured employees having low qualification.

Studies have revealed that the insured were more likely to pay doctor visits when sick and use health care in community health centres but had less visits per episode compared with the uninsured who tended to seek care less frequently (Short 2004 and McCormack 2009). Our study with comprehensive data using a large number of subjects, is one of its first in the Middle East region to emphasize upon the point that better education could significantly influence health insurance reimbursements.

The nationality of the expatriates was yet another distinguishing factor for assessing the impact of demographic factors on the issue of accessing healthcare. It was found that out of the total 4,575 expatriate workers interviewed, a majority of 69% belonged to the South-east Asian community, comprising Bangladesh (25.3%), followed by India (24%), and Pakistan (10.9%).

We speculate that when the economy deteriorates, expatriate infiltration increases. To remain in the earning country, expatriates are forced to shell out health premiums regardless of need. It may be mentioned that the high-quality facilities available, to expatriates in the Kingdom, are in contrast to the major health disparities in quality of healthcare, which have been reported to exist between migrant workers and the local population elsewhere, (Altijani and Ali, 2010).

In the present study, it was also observed that out of the 1,370 uninsured respondents a staggering 71% of non-Arab nationals were found to be uninsured compared with the 33% of Arab-based nationals (i.e., Egypt, Yemen) seen under insured category. These data show that there is still need for further development and distribution of affordable health insurance plans so that healthcare options are beneficial for both the insured

and the insurer. In the present study, analysis of the language proficiency variable revealed that irrespective of nationality or insurance status, 89.6%–93% of the subjects had proficiency in the Arabic language, whereas among the insured the majority of respondents (61%) were proficient in English. Existing literature shows that effective communication with patients and healthcare workers is a key part of safe and high-quality healthcare. Cultural misunderstanding between patients and predominantly expatriate healthcare providers is another factor contributing to patient dissatisfaction and poor quality of care, (Altijani and Ali, 2010 and Kronfoll 2012).

In the present study, it was also observed that because both native and expatriate subjects had good knowledge of both the major working languages of the Kingdom, Arabic and English, there was no reported experience of a language barrier. Thus, in our study language was not an issue in selecting healthcare as majority of the expatriates had good command of Arabic, the main language of communication, which is in contrast to the results of most similar studies, especially in countries that have a large number of expatriate healthcare workers. These expatriates faced language problems due to not being comfortable in the local language.

A recent review concluded that healthcare providers such as nurses and their patients experience serious language and communication barriers (Schyye, 2007). The results of the above-quoted study show a communication issue between patients and healthcare providers; however, as there have not yet been studies of the language issues between the health insured and the insurers, our study is one of the few reports, where the influence of language on obtaining health insurance among expatriates can be seen. The present data demonstrate that because of the language proficiency of the subjects, there were no communication issues when obtaining health insurance.

On evaluating the demographic factors that could predominantly influence decision making among the uninsured expatriates for not procuring health insurance, it was found that a majority (47.3 %) did not have working permits (*iqama*) and felt that the only purpose of health insurance was to renew these permits. This flawed perception, in which there is little value in obtaining health insurance, alarmingly defeats its purpose, especially in an expatriate-dominant country. The above findings possibly also reflect the deficient understanding of health insurance and its benefits among the interviewed uninsured respondents. Thus, when choosing health insurance, expatriates most value employment aspects, such as renewal of *iqama*, cost and money-saving, followed by coverage benefits, with regard to health awareness, knowledge and its benefits.

These data are in conjunction with those of (Altijani and Ali 2010 and Kronfoll, 2012), who have reported that the expatriate population in Arab countries faces significant difficulty in accessing health services. Although access has increased, the quality of the services provided remains low, mostly owing to expatriates' view of health insurance as an unnecessary expenditure. Thus, within our study sample, age, education and nationality are a significant influence on whether a person is enrolled in a health insurance plan. This implies that the young adults we studied did not generally opt health insurance because they believed they did not need it possibly due to their young age and perception of not requiring the insurance for saving money. In addition, there are other influencing factors, such as new health insurance sectors that are still under development, which will provide expatriates with more choices in the future (Gallagher, 2002; Alkhamis, 2016 and Safi, 2016).

## LIMITATIONS OF THE STUDY

This study had some limitations. It represented only male expatriates and excluded females, the elderly and children. The reason for excluding female expatriates was that their number was limited and represented only 1.7% of the expatriate population (98.3% are male) (Ministry of Labour, 2009). Therefore, if female expatriates were to be included as one of the study variables, it would have been very difficult to obtain a sufficient number of participants. As the expatriates are not allowed to keep their parents, the exclusion of the elderly was justified. Moreover, since this study is a cross sectional study, which may have increased bias with respect to time ordering of events.

## CONCLUSION

Providing appropriate healthcare services for a growing young population, inclusive of locals and expatriates, is one of the emerging priorities of Saudi Arabia. Existing disparities between different groups of expatriates can be addressed using this demographic profile and its association with health insurance status. Our findings indicate that expatriates' health insurance status is considerably impacted by several important demographic characteristics such as perceived need, perceived value related to age, sex, education level, socioeconomic status, nationality and language. However, as there is great scope for further development and creation of affordable health insurance plans beneficial for both the insured and the insurer, we recommend further, detailed studies, which might have bearing on the health of expatriates in light of upcoming health insurance sectors.

This work was supported by the King Abdullah International Medical Research Centre under grant number RC09/084, upon the recommendation of the Research Committee following the review of the Institutional Research Board on the ethical aspects of the proposal.

## CONFLICT OF INTEREST

The authors do not have any conflict of interest.

## REFERENCES

- Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey -Healthcare Questionnaire. 2009 ([http://www.meps.ahrq.gov/mepsweb/survey\\_comp/survey.jsp](http://www.meps.ahrq.gov/mepsweb/survey_comp/survey.jsp))
- Alkhamis A. (2012) Health care system in Saudi Arabia: An overview. *Eastern Mediterranean Health Journal* 18(10): 1078-1079.
- Alkhamis A.A., A. Hassan and P. Cosgrove (2014) Financing healthcare in Gulf Cooperation Council countries: a focus on Saudi Arabia *International Journal of Health Planning and Management* 29, e64-e 82
- Alkhamis AA (2016) Framing Health policy in the context of Saudi Arabia *Journal of Infection and Public Health* 9, 3-6
- Almutairi KM. (2015) Culture and language differences as a barrier to provision. *Saudi Medical Journal* 322: 444 – 445
- Alsaedi Y. (2011) Fake health insurance in order to legalize your residency permit, in *AL Madinah Newspaper* 2011; *Almadinah Al Madinah*
- Altijani HH; Ali FM. (2010) Examining Equal Access to Healthcare among Nationals and Expatriates: Evidence from Qatar's World Health Survey SSRN 1-30.
- Baicker K. (2013) The Oregon experiment-effects of Medicaid on clinical outcomes. *New England Journal of Medicine* 368(18), 1713-1722.
- Bassett M.C. and V.M. Kane (2007) Review of the Literature on Voluntary Private Health Insurance, in *Private Voluntary Health Insurance in Development Friend or Foe?*, A.S. Preker and M.C. Bassett, Editors Washington D.C. 335.
- Berkhout E. and H. Oostingh (2008) Health insurance in low-income countries: Where is the evidence that it works? *Joint NGO Briefing Paper* 112: 28.
- Cabinet of Ministers, Cooperative Health Insurance Law, in 71 Dated 9th of August 1999, Council of Ministers, Editor. 1999, Um Al Gorah, Makha Al Mukaramh.
- Carper K. and Beauregard K. (2009) Characteristics of Uninsured Workers: Estimates for the U.S. Civilian Non institutionalized Population 19-64 Years of Age, 2006 Medical Expenditure Panel Survey Statistical Brief No. 257 (Aug 2009) 1-8.
- Dorherty J. (2011) Expansion of the private for profit health sector in East and Southern Africa, in *EQUINET*, with UCT HEU and TARSC Policy 26.
- Drechsler D. and J.P. Jütting (2005) *Private Health Insurance in Low and Middle-Income Countries: Scope, Limitations, and Policy Responses* OECD Development Centre 67.
- Gallagher EB (2002) Modernization and health reform in Saudi Arabia, Chapter 4. In: Twaddle AC, ed. *Health care reform around the world*. London, Auburn House 181-197.
- Health Insurance Coverage in the United States (2013) <http://www.census.gov/in>
- Islam, M. (2007) *Health Systems Assessment Approach: A How-To Manual*. U.S. Agency for International Development in collaboration with Health Systems 20/20 Management Sciences for Health: Arlington, VA.
- Jeong, H.S. and R. Niki (2012) Divergence in the development of public health insurance in Japan and the Republic of Korea: A multiple-payer versus a single-payer system. *International Social Security Review* 65(2): 51-73.
- Kenney G, Pelletier J and Blumberg L. (2010) How Will the Patient Protection and Affordable Care Act of 2010 Affect Young Adults? The Urban Institute Press
- Khouja T. (2013) Reform of financing healthcare services in the GCC: Focus on establishing health insurance system in KSA University of Pittsburgh 1- 41.
- Kriss J. Sara R Collins, B. Mahato, E. Gould and Cathy Schoen (2008) Rite of passage? Why young adults become uninsured and how new policies can help, *Commonwealth Fund Pub* 1139 Vol. 38 1-26
- Kronfoll N M.(2012) Access and barriers to health care delivery in Arab Countries: a review *Eastern Mediterranean Health Journal* Vol 18 No.12, 1239-1246
- Kutner M. and S.White (2006) The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy. NCEs National Center for Education Statistics 483.
- Levy H. and A. Janke (2016) Health Literacy and Access to Care. *Journal of Health Communication* 21(sup1): 43-50.
- McCormack L. (2009) Health Insurance Literacy of Older Adults. *Journal of Consumer Affairs* 43(2): 223-248.
- Ministry of Labour.The Annual Statistical Book for One Year 2009, in *The Annual Report*, M.O. Labour, 2009;Editor Ministry of Labour: Riyadh.
- Ministry of Labour Saudi Labour Market Indicators, Riyadh Region, Ministry of Labour, Editor. Ministry of Labour Riyadh. 2009; 124.
- Paez, KA. CJ Mallery, H.J. Noel C Pugliese (2014) Development of the Health Insurance Literacy Measure (HILM): Conceptualizing and Measuring Consumer Ability to Choose and Use Private Health Insurance. *Journal of Health Communication* 19(Sup 2): 225-239.
- Quinn K, Schoen C, Buatti L.(2000) On Their Own: Young Adults Living Without Health Insurance safety in health care 2000
- Safi O. (2016) The challenges for Saudi Arabia healthcare system *Indian Journal of Applied Research* Vol 6, No.5 231-233



- Schoen, C.R Osborn, D. Squires, M. M. Doty (2010) How health insurance design affects access to care and costs, by income, in eleven countries. *Health Affairs Project Hope* 29(12) 2323-2334.
- Schuyve PM. (2007) Language differences as a barrier to quality and safety in health care. *Journal of General Medicine* 22, 2:360-361
- Sekhri N. and W. Savedoff (2005) Private Health Insurance: Implications for Developing Countries. *Bulletin of the World Health Organization* 83: 8
- Short P. (2004) Counting and characterizing the uninsured. In: Mc Glaughlin C, Ed. *Health policy and the uninsured*. Washington DC The Urban Institute Press
- Smith, P.C.(2007) Provision of a Public Benefit Package alongside Private Voluntary Health Insurance in private Voluntary Health Insurance in Development Friend or Foe?, Editors: A.S. Preker, R.M. Scheffler and M.C. Bassett Washington DC 147-167
- Sommers B.D., K. Baicker and A.M. Epstein (2012) Mortality and access to care among adults after state Medicaid expansions. *New England Journal of Medicine*, 367(11) 1025-1034.
- Stewart M. (2001) Towards a global definition of patient centred care *British Medical Journal* 322,445-446.
- The Council of Cooperative Health Insurance, Regulations for Cooperative Health Insurance System, Insurance, Editor (2009) The Council of Cooperative Health Insurance Riyadh.
- The Economist, Intelligence Report Health Care in Saudi Arabia (2014) ([http://www.eiuperpectives.economist.com/healthcare/ Saudi Arabia](http://www.eiuperpectives.economist.com/healthcare/Saudi%20Arabia))
- Thomson S.T., Foubister J. and E. Mossialos (2009) Financing health care in the European Union: Challenges and policy responses in *European Observatory on Health Systems and Policies World Health Organization: Copenhagen*. p. 200
- United Nations (2008) *World Population Prospects. The 2008 Revision in World Population Prospects: Population Division*, Editor. Department of Economic and Social Affairs New York 87.