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PERCEPTION OF HEALTH INSURANCE AMONG MINISTRY OF HEALTH PHYSICIANS IN SAUDI ARABIA

Medicine

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ABSTRACT

Recently, there has been an increasing demand and expectation of health care (HC) by Saudi Arabian citizens that has posed many challenges to the government. One strategy employed by the Saudi Ministry of Health (MOH) to overcome these challenges is the expansion of health insurance (HI) to cover all Saudi and non-Saudi citizens and visitors. To better understand the possible impact of HI, we conducted a cross-sectional study to assess MOH physicians' HI perception regarding its effect on HC, and sought to determine the correlation between physicians' sociodemographic factors and reported perception. We found that participants believe that HI implementation will positively affect the primary domains of the World Health Organization health system framework. Additionally, positive correlations between physicians' sociodemographic factors and HI perception was observed. Future research should comprehensively study HI by assessing the perception of citizens and HC workers in other government institutions and the private sector.

KEYWORDS

Health Insurance, Perception, Physicians, Saudi Arabia

1. Introduction

Takaful Insurance is a cooperative and comprehensive health insurance (HI) program based on Islamic concepts. While this program was first initiated in Islamic countries, it has now reached most countries with a large Muslim community (Barakah & Alsaleh, 2011). In 1990, this program was introduced in Saudi Arabia under the supervision of The Council of Cooperative Health Insurance (CCHI) (The Saudi Arabian CCHI). This system was designed to provide essential health care (HC) services for people working in private institutions and their family members (The Saudi Arabian CCHI); for example, medical examination and treatment, preventive measures, maternity and child medical care, diagnostic tests, hospitalization, and essential dental care.

To fulfill the Saudi government's Vision 2020, the Ministry of Health (MOH) plans to expand coverage to all citizens and visitors of Saudi Arabia (The Saudi Arabian MOH). Therefore, the MOH has started programs to study the possible effects of cooperative HI on the population.

As clinical leaders and patient advocates (Rosenbaum, Frankford, Moore, & Borzi, 1999), physicians are well positioned to provide expert opinions on the health system and patient needs. Additionally, as HI may influence physicians' work, lifestyle, income, and satisfaction, they will have personal interest in any HC reform (McCormick, Himmelstein, Woolhandler, & Bor, 2004). Thus, it would be beneficial to better understand physicians' HI perception.

Unfortunately, there is limited previous research on this subject. Alnaif (2006) assessed physicians' HI perception in Saudi Arabia. This study was one of the first to assess the effect of HI on HC access, costs, quality of care, efficiency, effectiveness, adoption of new technology, and utilization of HC services (through primary and preventive care). Physicians in this survey believed that accessibility was a significant policy concern, on which HI would likely have a positive effect. Alnaif concluded that HI could be the answer to the current challenges facing HC systems in Saudi Arabia.

However, Feldman, Novack, and Gracely (1998) found that physicians thought HI may limit services, expressing dissatisfaction with managed care and HI in general. Participants believed HI would result in negative effects on patient-physician relationships, time spent with patients, physician autonomy, availability of resources, research, and teaching. Interestingly, most stated they would accept a 10% reduction in income to reduce administrative paperwork.

Thus, the current study sought to assess physicians' HI perception and its effect on patients and the HC system. Additionally, it sought to determine the correlation between physicians' socioeconomic demographics and their perceptions.

2. Materials and Methods

2.1 Study area/Time

This study was conducted in Saudi Arabia for 12 months from July 2017.

2.2 Study subjects

The subjects were all MOH physicians working in Saudi Arabia.

2.3 Study design

This is a descriptive, cross-sectional study, and data were obtained through a self-administered, online questionnaire.

2.4 Research variables

- Dependent variables: Physicians' HI perception (HC access, costs, quality of care, efficiency, effectiveness, adoption of new technology, and utilization of HC services [through primary and preventive care]).
- Independent variables: Socio-demographic data of participants (age, gender, nationality, specialty, degree, personal HI, job role, and years in practice).

2.5 Sample size

The WHO standard formula (WHO Sample Size Formula) to calculate sample size was used, resulting in a suggested sample size of approximately 400 physicians. To equally allocate, 80 physicians were randomly selected from each of the 5 provinces in the Kingdom of Saudi Arabia (Central, North, South, East, West).

2.6 Ethical considerations

The research proposal was approved by the MOH Institutional Review Board. Voluntary participation was explained and consent was obtained prior to administering the questionnaire. Additionally, all information was kept confidential and anonymous. As the current study was self-funded, no conflicts of interest are declared.

2.7 Data collection methods and study tools

A self-administered, online questionnaire instrument was used to collect data from participants. The questionnaire was designed using an online survey website (SurveyMonkey). The instrument was constructed based on a previous study by Alnaif (2006). Prior to data collection, a pilot study was conducted to check clarity and ease of

answering. A sample (n = 40) of physicians responded to the pilot survey. Feedback was used to reconstruct the questionnaire. The final version of the questionnaire contained two categories of questions (demographics and HI perception). A Likert-type scale was used for the 28 perception statements (1 = *Strongly disagree*, 4 = *Strongly agree*).

2.8 Data management and analysis plan

Data were analyzed using IBM SPSS v. 21. All variables were coded before entry and any questionnaire with less than half of questions answered was dismissed. All categorical data were presented as percentages. Chi-square tests were used to measure relationships between dependent and independent variables. A p-value less than 0.05 was considered statistically significant. Additionally, results of perception items were analyzed and subdivided into the six domains of the WHO health system framework (WHO, 2018).

3. Results

3.1 Sociodemographic Characteristics

A total of 415 complete questionnaires were analyzed. Among the participants, 53% (n = 218) were males, and most (83.6%; n = 347) were young physicians (25–34 years of age). Saudi physicians were the majority (93%; n = 386), with 73.3% (n = 304) resident physicians (Table 1).

Table 1. Participants' sociodemographic characteristics (N = 415)

Characteristics	N	(%)
Age group		
• 25–34	347	83.6
• 35–44	54	13.0
• ≥ 45	14	3.4
Nationality		
• Saudi	386	93.0
• Non-Saudi	29	7.0
Medical degree		
• Bachelor's GP	19	4.6
• Resident	304	73.3
• Specialist	54	13.0
• Consultant	38	9.2
Specialty		
• FM/PHC physicians	180	43.4
• Medical specialties	111	26.7
• Anesthesia/surgical specialties	79	19.0
• ObGyn & Pediatric specialties	45	10.8
Number of years in practice		
• 0–10	377	90.8
• 11–20	30	7.2
• 21–30+	8	1.9

GP: General Practitioner; FM: Family Medicine; PHC: Primary HC; ObGyn: Obstetrics and Gynecology

Most participants were only practitioners (85%; n = 351; Figure 1). Further, most participants (69%; n = 288) did not have their own HI.

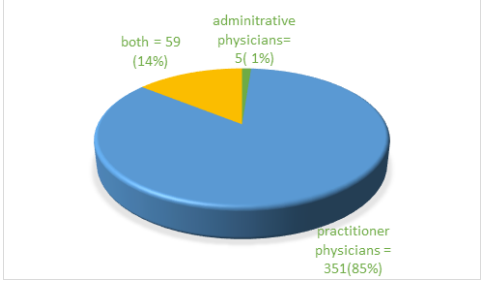

Figure 1. Participants' job roles

3.2 Physicians' HI perception

According to participants, HI implementation will likely affect six primary domains: HC financing, health workforce, medical products and technologies, service delivery, accessibility, and HC quality (Table 2).

3.2.1 HC financing

Research participants agreed that the main function of HI is to spread the financial risk among the population (59%), and that it will likely reduce HC costs for the HC system, while increasing administrative costs.

3.2.2 Health workforce

Research participants agreed that HI will raise the standards of clinical practice (76.6%), that more physicians and hospitals will seek professional liability insurance (91.6%), that it will create more competition between HC providers (83.6%), and that it will create new jobs in the HC sector (71.3%).

3.2.3 Medical products and technologies

Around (60%) agreed that HI will increase the demand for more advanced diagnostic treatment procedures. Moreover, it will likely lead to the adoption of new technology (78.6%).

3.2.4 Service delivery

Most participants agreed that HI will improve the health status of all citizens (69.4%), increase the role of primary HC and prevention measures (79.3%), and raise the demand for outpatient services (77.6%); nearly more than half predicted that HI would result in a decrease in emergency room or inpatient services (58.08% and 54.45%, respectively).

Most (68%) participants agreed that HI will likely increase demand for unnecessary services, and that providers will likely provide unneeded services to make more money (62.7%). Additionally, it will lead to more regulations and utilization review of services (92%). Further, it will possibly lead to some people being excluded from obtaining HC services (62.9%). Finally, most participants believed that patients will have a higher level of responsibility for care under HI (71.3%).

3.2.5 Accessibility

Most participants (88.2%) agreed that HI will improve the development of the private HC sector, that all citizens should have access to HC services (92.3%), that HI will lead to an even distribution of HC services between rural and urban areas (approx. 75%), and that it will limit patient freedom to choose doctors/hospitals (55%).

3.2.6 Health care quality

Most participants believed that HI will assure quality, efficiency, and effectiveness of the HC system (74%, 77%, and 78%, respectively).

Table 2. Participants' HI perception

a. HC financing:	*Strongly disagree*	*Disagree*	*Agree*	*Strongly agree*
1. The main function of HI is to spread the financial risk among the population.	33 (7.95)	139 (33.49)	206(49.64)	37 (8.92)
2. HI will reduce HC costs for the HC system.	28 (6.75)	70 (16.87)	217 (52.29)	100 (24.10)
3. HI will increase administrative costs of the HC system.	22 (5.30)	110 (26.51)	228 (54.94)	55 (13.25)
b. Health workforce:				
4. HI will raise the standards of clinical practice.	16 (3.86)	80 (19.28)	242 (58.31)	77 (18.55)
5. HI will create more competition between HC providers.	9 (2.17)	55 (13.25)	210 (50.60)	141 (33.98)
6. HI will create new jobs in the HC sector.	22 (5.30)	97 (23.37)	221 (53.25)	75 (18.07)
7. Under HI, more physicians and hospitals will seek professional liability insurance.	10 (2.41)	25 (6.02)	293 (70.60)	87 (20.96)
c. Medical products and technologies:				
8. HI will increase the demand for more advanced diagnostic treatment procedures.	41 (9.88)	126 (30.36)	174 (41.93)	74 (17.83)
9. HI will lead to more adoption of new technology.	17 (4.10)	72 (17.35)	262 (63.13)	64 (15.42)
d. Service delivery:				
10. HI will improve the health status of all citizens.	31(7.47)	96 (23.13)	228 (54.94)	60 (14.46)
11. HI will increase the role of PHC and prevention.	17 (4.10)	69 (16.63)	202 (48.67)	127 (30.60)

12. HI will increase the demand for emergency room services.	37 (8.92)	204 (49.16)	121 (29.16)	53 (12.77)
13. HI will increase the demand for outpatient services.	11 (2.65)	82 (19.76)	224 (53.98)	98 (23.61)
14. HI will increase the demand for inpatient services.	24 (5.78)	202 (48.67)	145 (34.94)	44 (10.60)
15. Under HI, providers will give patients unneeded services to make more money.	37 (8.92)	118 (28.43)	192 (46.27)	68 (16.39)
16. Under HI, patients will demand more unneeded services.	30 (7.23)	102 (24.58)	197 (47.47)	86 (20.72)
17. HI will exclude some people from getting HC services.	34 (8.19)	120 (28.92)	185 (44.58)	76 (18.31)
18. HI will lead to more regulations and utilization review of services.	8 (1.93)	35 (8.43)	289 (69.64)	83 (20.00)
19. Under HI, patients have more responsibilities toward services.	11 (2.65)	108 (26.02)	238 (57.35)	58 (13.98)
e. Accessibility:				
20. HI will improve access to HC services for all citizens.	32 (7.71)	59 (14.22)	206 (49.64)	118 (28.43)
21. HI will improve the development of the private HC sector.	11 (2.65)	38 (9.16)	243 (58.55)	123 (29.64)
22. HI will eventually make the HC system more private than public.	12 (2.89)	52 (12.53)	246 (59.28)	105 (25.30)
23. Everyone in the Kingdom should have access to HC services.	15 (3.61)	17 (4.10)	130 (31.33)	253 (60.96)
24. HI will limit patients' freedom to choose doctors and hospitals.	32 (7.71)	155 (37.35)	177 (42.65)	51 (12.29)
25. HI will create an even distribution of HC services between rural and urban areas.	49 (11.81)	129 (31.08)	189 (45.54)	48 (11.57)
f. HC quality:				
26. HI will improve the efficiency of the HC system.	17 (4.10)	78 (18.80)	227 (54.70)	93 (22.41)
27. HI will improve the effectiveness of the HC system.	19 (4.58)	74 (17.83)	246 (59.28)	76 (18.31)
28. HI will improve the quality of HC services.	21 (5.06)	88 (21.20)	217 (52.29)	89 (21.45)

3.3 Correlations between participants' characteristics and perceptions

The demographic characteristics were assessed for correlation with the responses to the questionnaire items.

3.3.1 Correlations with physicians' age

Six items demonstrated significant correlations between age and HI perception. Specifically, that HI would "improve efficiency of the HC system," "improve the health status of all citizens," "raise the standards of clinical practice," "create new jobs in the HC sector," "lead to more regulations and utilization review of services," and "increase the role of PHC and prevention" were significantly related to the young age group (q^2 = 7.041, 7.200, 6.766, 6.472, 9.435, and 7.976, respectively; *p*-values = 0.030, 0.027, 0.034, 0.039, 0.009, and 0.019, respectively; Appendix 1).

3.3.2 Correlations with physicians' gender

Seven items demonstrated a significant correlation with gender; specifically, "HI will improve the efficiency of the HC system," "HI will create more competition between HC providers," "HI will increase the administrative costs of the HC system," "Under HI, providers will give patients unneeded services to make more money (induce demand of services)," "Everyone in the Kingdom should have access to HC services," "HI will limit patient freedom to choose doctors and hospitals," and "HI will create an even distribution of HC service between rural and urban areas in the Kingdom" (q2 = 4.340, 8.355, 5.063, 4.621, 5.204, 15.255, and 6.161, respectively; p-values = 0.037, 0.004, 0.024, 0.032, 0.023, < 0.001, and 0.013, respectively; Appendix 1).

3.3.3 Correlations with physicians' nationality

Two items demonstrated significant correlations with physicians' nationality: HI will "improve the efficiency of the HC system" and "increase the demand for emergency room services" (q^2 = 6.037 and 5.195, respectively; *p*-values = 0.014 and 0.023, respectively).

3.3.4 Correlations with physicians' degree

Three items demonstrated a significant correlation with physicians' degree: HI will "increase the demand for inpatient services," "create new jobs in the HC sector," and "increase the role of PHC and prevention" (q^2 = 12.884, 13.216, 9.154, respectively; p-values = 0.005, 0.004, 0.027, respectively).

3.3.5 Correlations with physicians' specialty

Four items were found to be significantly correlated with physicians' specialty: HI will "improve the effectiveness of the HC system," "improve the quality of HC services," "lead to more adoption of new technology," and "create more competition between HC providers" (q^2 = 9.696, 15.790, 8.471, 9.412, respectively; *p*-values = 0.021, 0.001, 0.037, 0.024, respectively).

3.3.6 Correlations with physicians' experience

Only one item was correlated with years of practice: "HI will increase the demand for inpatient services" (q^2= 7.363; *p*-value = 0.025).

3.3.7 Correlations with physicians' job role

Four items demonstrated a significant correlation with job role; specifically, HI will "improve the efficiency of the HC system," "improve the effectiveness of the HC system," "improve the health status of all citizens," and "increase the role of PHC and prevention" (q^2= 7.347, 8.279, 9.515, 8.328, respectively; *p*-values = 0.025, 0.016, 0.009, 0.016, respectively).

This study is one of the few conducted in Saudi Arabia that explore physicians' HI perception. HI is a strongly recommended strategy at the MOH level. Thus, the current results will hopefully support decision makers in understanding health providers' concerns and beliefs, especially at the PHC level. Most participants were family medicine and PHC physicians who are young compared to those in Alnaif's study (2006).

Thornton and Rice (2008) concluded that providing HI may produce valuable social and economic benefits, which is consistent with our findings. Specifically, participants thought that while administrative costs will likely increase, HC costs in general will decrease. A review by Mathauer and Nicolle (2010) compared administrative costs of 58 countries and found that the focus should be on not only lowering administrative costs but also optimizing resources by increasing administrative expenditure efficiency.

The current participants also thought that HI will create more competition between HC providers. This finding is consistent with Colliers (2012) and Jacobs and Goddard (2000). These studies show that managed competition, focused on delivering optimal care levels at competitive prices, is the solution to overcome the challenges facing the HC system. Similarly, other studies (Colliers, 2012; Watts & Freudmann, 2014) have found that the need for skilled workforce will increase within a HC system exposed to HI. This will be affected by employment regulation and a lack of qualified Saudi workforce. To overcome this issue, training and education of Saudi nationals will need to be mandatory to prepare local medical professionals. In addition, foreign staff should be kept for a period to support health systems (Colliers, 2012; Watts & Freudmann, 2014).

HI, as per participants' perception, may increase the demand for more advanced diagnostic treatment procedures, and lead to increased adoption of new technology. This is consistent with Besley's (1989) findings. However, our findings show that HI will likely improve the health status of citizens and increase the role of PHC and prevention measurement. This is predicted to occur while the demand for outpatient services rises, and the demand for emergency room and inpatient services falls. Previous research (Cunningham & Sheng, 2018; Finkelstein et al., 2012) has reported significantly higher HC utilization, including primary and preventive care as well as hospitalizations with adoption of HI. These findings support the current participants' perceptions regarding PHC, preventive medicine, and outpatient services, but are not consistent with our findings regarding inpatient and emergency services.

Similar to the prediction made by our participants that HI will lead to unneeded services, other studies (Besley, 1989; Boes & Gerfin, 2016) have reported that physicians behave differently toward patients with HI. This may prompt them to order more unnecessary health services for financial gain. Additionally, patients may ask for more unneeded services to fully utilize HI coverage (Besley, 1989).

Participants' perceptions are supported by CCHI policy approved by Ministerial Order (9/35/1/DH) that emphasizes that HI will have limitations and exclusions of some cases in providing HC services (The Saudi Arabian CCHI). Moreover, there will be regulation and utilization review of services, which have already been implemented by CCHI and The Saudi Arabian Monetary Agency (SAMA) (Barakah & Alsaleh, 2011; The Saudi Arabian CCHI). Nevertheless, we found that participants believe that accessibility to HC is a right for every citizen.

Regarding the private health sector, the current participants believed that HI would likely improve its development and may lead to HC privatization in the Kingdom. Additionally, this would likely contribute to an increase in the distribution of HC at the urban and rural levels. However, limitations in individual freedom of choice of HC remains a concern. This finding is consistent with that of previous research (Albejaidi, 2017; Colliers, 2012), which suggests that, while the government faces challenges in providing free HC services to the community, HI may be a solution in diversifying investment and may support the empowerment of the private health sector. This, in turn, will increase overall access to HC in both urban and rural areas. It is hypothesized that with the increase in population density and public demand for HC, the government will eventually seek privatization (Albejaidi, 2017; Colliers, 2012).

In addition, the current participants had a good perception of quality, efficiency, and effectiveness of HC services under HI. As Walston, Al-Harbi, and Al-Omar (2008) suggest, the Saudi HC system's move toward HI implementation and privatization is the new government strategy to overcome the challenges of cost-effective, efficient, and high-quality Saudi HC.

As per our knowledge, previous studies have not adequately examined the correlations between physicians' demographics and HI perception. Our study may help fill the gaps in the existing literature. Physicians' gender, age, job role, specialty, degree, nationality, and experience were found to have a positive impact on their perceptions. Regarding this issue, it should be noted that most participants in the current study were young Saudi residents, with limited practical experience. Thus, future studies should include experienced physicians.

Conclusion

The results of this study will hopefully help decision makers in understanding HC providers' HI perception. Most participants in this study belong to the new generation of physicians with a positive HI perception regarding the main domains of the WHO health system framework: HC financing, health workforce, medical products and technologies, service delivery, accessibility, and HC quality (WHO, 2018). They believe that HI implementation will lead to financial protection among the population and reduce HC costs. However, it could increase the administrative costs of the HC system. Further, it will lead to the adoption of new medical products and technologies, and the improvement of the workforce management system as well as the accessibility, quality, efficiency, and effectiveness of health care services. This could lead to the promotion of citizens' health status.

Furthermore, the development of the private health care sector will improve the distribution of health care services between rural and urban areas. Thus, the HC system will eventually move toward privatization. On the other hand, HI will limit patients' freedom to choose their doctors and decrease the need for inpatient and emergency services.

Considering the current importance of HI and in line with Saudi Vision 2030, future studies should examine HI more comprehensively by assessing the perceptions of citizens and HC workers in other government institutions and the private sector.

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Appendix 1. Correlation between physicians' age/gender and HI perception

		Age			Chi	P	Gender		Chi	P
		25-34 N(%)	35-44 N(%)	≥45 N(%)			Female N(%)	Male N(%)		
1. Main function of HI is to spread the financial risk among the population	disagree	138(39.8)	26(48.1)	8(57.1)	2.823	0.244	82(41.6)	90(41.3)	0.005	0.944
	agree	209(60.2)	28(51.9)	6(42.9)			115(58.4)	128(58.7)		
2. HI will improve access to HC services for all citizens	disagree	72(20.7)	16(29.6)	3(21.4)	2.155	0.341	49(24.9)	42(19.3)	1.900	0.168
	agree	275(79.3)	38(70.4)	11(78.6)			148(75.1)	176(80.7)		
3. HI will reduce HC costs for the HC system.	disagree	81(23.3)	13(24.1)	4(28.6)	0.211	0.900	48(24.4)	50(22.9)	0.117	0.732
	agree	266(76.7)	41(75.1)	10(71.4)			149(75.6)	168(77.1)		
4. HI will improve the efficiency of the HC system.	disagree	72(20.7)	20(37.0)	3(21.4)	7.041	0.030*	54(27.4)	41(18.8)	4.340	0.037*
	agree	275(79.3)	34(63.0)	11(78.6)			143(72.6)	177(81.2)		
5. HI will improve the effectiveness of the HC system.	disagree	72(20.7)	18(33.3)	3(21.4)	4.264	0.119	50(25.4)	43(19.7)	1.904	0.168
	agree	275(79.3)	36(66.7)	11(78.6)			147(74.6)	175(80.3)		
6. HI will improve the quality of HC services.	disagree	85(24.5)	21(38.9)	3(21.4)	5.174	0.075	56(28.4)	53(24.3)	0.905	0.342
	agree	262(75.5)	33(61.1)	11(78.6)			141(71.6)	165(75.7)		
7. HI will improve the health status of all citizens.	disagree	98(28.2)	25(46.3)	4(28.6)	7.200	0.027*	65(33.0)	62(28.4)	1.011	0.315
	agree	249(71.8)	29(53.7)	10(71.4)			132(67.0)	156(71.6)		
8. HI will increase the demand for emergency room services.	disagree	198(57.1)	32(59.3)	11(78.6)	2.593	0.273	114(57.9)	127(58.3)	0.006	0.936
	agree	149(42.9)	22(40.7)	3(21.4)			83(42.1)	91(41.7)		
9. HI will increase the demand for outpatient services.	disagree	71(20.5)	19(35.2)	3(21.4)	5.834	0.054	46(23.4)	47(21.6)	0.191	0.662
	Agree	276(79.5)	35(64.8)	11(78.6)			151(76.6)	171(78.4)		
10. HI will increase the demand for inpatient services.	disagree	181(52.2)	34(63.0)	11(78.6)	5.595	0.061	111(56.3)	115(52.8)	0.539	0.463
	agree	166(47.8)	20(37.0)	3(21.4)			86(43.7)	103(47.2)		
11. HI will increase the demand for more advanced diagnostic treatment procedures.	disagree	138(39.8)	21(38.9)	8(57.1)	1.736	0.420	74(37.6)	93(42.7)	1.118	0.290
	agree	209(60.2)	33(61.1)	6(42.9)			123(62.4)	125(57.3)		
12. HI will lead to more adoption of new technology	disagree	72(20.7)	15(27.8)	2(14.3)	1.811	0.404	40(20.3)	49(22.5)	0.290	0.590
	agree	275(79.3)	39(72.2)	12(85.7)			157(79.7)	169(77.5)		
13. HI will raise the standards of clinical practice.	disagree	72(20.7)	19(35.2)	5(35.7)	6.766	0.034*	44(22.3)	52(23.9)	0.134	0.714
	agree	275(79.3)	35(64.8)	9(64.3)			153(77.7)	166(76.1)		

14.HI will improve the development of the private HC sector.	disagree	38(11.0)	8(14.8)	3(21.4)	1.958	0.376	24(12.2)	25(11.5)	0.051	0.822
	agree	309(89.0)	46(85.2)	11(78.6)			173(87.8)	193(88.5)		
15.HI will create more competition between HC providers	disagree	51(14.7)	11(20.4)	2(14.3)	1.167	0.558	41(20.8)	23(10.6)	8.355	0.004*
	agree	296(85.3)	43(79.6)	12(85.7)			156(79.2)	195(89.4)		
16.HI will create new jobs in the HC sector	disagree	91(26.2)	23(42.6)	5(35.7)	6.472	0.039*	52(26.4)	67(30.7)	0.952	0.329
	agree	256(73.8)	31(57.4)	9(64.3)			145(73.6)	151(69.3)		
17.HI will eventually make the HC system more private than public.	disagree	53(15.3)	6(11.1)	5(35.7)	5.195	0.074	29(14.7)	35(16.1)	0.141	0.707
	agree	294(84.7)	48(88.9)	9(64.3)			168(85.3)	183(83.9)		
18.HI will increase the administrative costs of the HC system.	disagree	108(31.1)	19(35.2)	5(35.7)	0.457	0.796	52(26.4)	80(36.7)	5.063	0.024*
	agree	239(68.9)	35(64.8)	9(64.3)			145(73.6)	138(63.3)		
19.Under HI, providers will give patients unneeded services to make more money	disagree	127(36.6)	21(38.9)	7(50.0)	1.096	0.578	63(32.0)	92(42.2)	4.621	0.032*
	agree	220(63.4)	33(61.1)	7(50.0)			134(68.0)	126(57.8)		
20.Under HI, patients will demand more unneeded services.	disagree	103(29.7)	22(40.7)	7(50.0)	4.845	0.089	65(33.0)	67(30.7)	0.244	0.621
	agree	244(70.3)	32(59.3)	7(50.0)			132(67.0)	151(69.3)		
21.Everyone in the Kingdom should have access to HC services.	disagree	25(7.2)	5(9.3)	2(14.3)	1.157	0.561	9(4.6)	23(10.6)	5.204	0.023*
	agree	322(92.8)	49(90.7)	12(85.7)			188(95.4)	195(89.4)		
22.HI will exclude some people from getting HC services	disagree	135(38.9)	15(27.8)	4(28.6)	2.931	0.231	72(36.5)	82(37.6)	0.050	0.822
	agree	212(61.1)	39(72.2)	10(71.4)			125(63.5)	136(62.4)		
23.HI will lead to more regulations and utilization review of service.	disagree	30(8.6)	12(22.2)	1(7.1)	9.435	0.009*	24(12.2)	19(8.7)	1.339	0.247
	agree	317(91.4)	42(77.8)	13(92.9)			173(87.8)	199(91.3)		
24.Under HI, more physicians and hospitals will seek professional liability insurance.	disagree	27(7.8)	6(11.1)	2(14.3)	1.314	0.519	17(8.6)	18(8.3)	0.019	0.892
	agree	320(92.2)	48(88.9)	12(85.7)			180(91.4)	200(91.7)		
25.HI will limit patients' freedom to choose doctors and hospitals.	disagree	158(45.5)	22(40.7)	7(50.0)	0.576	0.750	69(35.0)	118(54.1)	15.255	0.000*
	agree	189(54.5)	32(59.3)	7(50.0)			128(65.0)	100(45.9)		
26.HI will increase the role of PHC and prevention	disagree	64(18.4)	19(35.2)	3(21.4)	7.976	0.019*	45(22.8)	41(18.8)	1.026	0.311
	agree	283(81.6)	35(64.8)	11(78.6)			152(77.2)	177(81.2)		
27.Under HI, patients have more responsibilities toward services.	disagree	98(28.2)	18(33.3)	3(21.4)	0.964	0.617	57(28.9)	62(28.4)	0.012	0.912
	agree	249(71.8)	36(66.7)	11(78.6)			140(71.1)	156(71.6)		
28.HI will create an even distribution of HC services between rural and urban areas in the Kingdom.	disagree	144(41.5)	26(48.1)	8(57.1)	2.045	0.360	72(36.5)	106(48.6)	6.161	0.013*
	agree	203(58.5)	28(51.9)	6(42.9)			125(63.5)	112(51.4)		

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