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Measuring health care\insurance employees' satisfaction level in Taibah University

Abstract:

Taibah University (TU) is as strong and successful as its employees are. By measuring healthcare employee satisfaction, TU can gain the information needed to improve their satisfaction, motivation, retention and productivity. The purpose of this study is to capture the views held by employees on various aspects of the Taibah University health care system. The research aims to investigate the major factors affecting health care workers' satisfaction level in Taibah University, access and understand employee satisfaction levels, advocate and improve employee satisfaction and retention. The research is conducted via a survey taken by the respondents. Respondents were chosen from administrative staff and faculty members at Taibah University.

Keywords: health care, employees' satisfaction level, survey, reliability.

Introduction

Employee satisfaction in health care defines as, "the terminology used to describe whether employees are happy and contented and fulfilling their desires and health care needs at work. Many measures purport that health care employee satisfaction is a factor in employee motivation, employee goal achievement, and positive employee morale in the workplace".

A healthcare employee survey reveals much valuable information regarding the corporate culture of hospital, clinic, or medical center. Health care employee surveys can address some or all of the following issues:

- How is staff morale?
- What are the roots causes contributing to employee burnout?
- What steps can be taken to reduce turnover and recruit loyal, long term employees?
- Do employee satisfaction levels vary significantly from unit to unit, or at separate locations?

1. Research problem

Taibah University (TU) is as strong and successful as its employees are. By measuring health care employee satisfaction, TU can gain the information needed to improve their satisfaction, motivation, retention and productivity.

When designed, administered and interpreted properly, health care employee satisfaction surveys can:

- Increase morale and diminish stress and burnout.
- Improve staff performance by enhancing work environment.
- Boost profitability by reducing staff turnover.

Additionally, staff satisfaction and longevity is directly related to the patient's level of satisfaction and quality of care. The results from a health care employee satisfaction survey will provide helpful insights to guide your organization's efforts at improvement. With this knowledge, you will be able to make immediate progress in such critical areas as employee training, motivation, and communication.

Our healthcare employee satisfaction survey helps to identify the needs and concerns of the employees so that improvements can be made and stronger teams can be formed. TU performance is expected to increase as more satisfied employees will increase the university's competitiveness. Other intangible benefits include the reinforcement of TU's goals and values, better internal and external communication, a positive working and social environment, an improved university image and increased employee loyalty.

Such a survey helps to gain valuable information about how to improve and indicate the need for establishing benchmarks that represent targets of excellence as well as determine what drives satisfaction of employees. Capturing demographic and departmental employee satisfaction data provides information to launch meaningful change, and also helps to increase a movement towards developing a healthy work climate.

2. Research objectives

- Investigate the major factors affecting health care workers' satisfaction level in TU.
- Access and understand employee satisfaction levels.
- Identify and prioritize areas requiring improvement.
- Advocate and improve employee satisfaction and retention.

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3. Literature review

A review of the literature reveals that; current theoretical models do not provide a complete framework for analyzing health care satisfactions; direct measures of health satisfactions are rarely used in empirical health production studies; minimal attention has been paid to the content of the satisfaction variable; and only a few studies treated it as endogenous.

Conducting surveys using email and internet have become increasingly by social scientists and others. Many of e-surveys have been conducted recently (Naakesh A. Dewan et al., 2000; Tom W. Smith and J. Michael Dennis, Philip J. Kroth et al., 2009).

There are many advantages of using e-surveys including much faster than classical and traditional modes like phones or normal mail or in-person, flexibility, low cost, easy to apply, etc. In the same time there are some general factors impeding the use of e-surveys including the difficulty of conducting random sampling, whole population coverage, low response rates, finding how people can reach to the survey website, etc.

There are some surveys conducted in the area of health care:

Laurence Baker; Todd H. Wagner; Sara Singer et al. (2003). They conducted a National Survey to study the Use of the Internet and E-mail for Health Care Information. Objective of the study was to measure the extent of Internet use for health care among a representative sample of the US population, to examine the prevalence of e-mail use for health care, and to examine the effects that Internet and e-mail use have on users' knowledge about health care matters and their use of the health care system. By analyzing data, there were approximately 40% of respondents with Internet access reported using the Internet to look for advice or information about health or health care in 2001. Six percent reported using e-mail to contact a physician or other health care professional. About one third of those using the Internet for health reported that using the Internet affected a decision about health or their health care, but very few reported impacts on measurable health care utilization; 94% said that Internet use had no effect on the number of physician visits they had and 93% said it had no effect on the number of telephone contacts. Five percent or less reported use of the Internet to obtain prescriptions or purchase pharmaceutical products.

4. Research methodology

The research will be conducted via a survey taken by the respondents. Respondents will be chosen from administrative staff and faculty members at TU. The need for such surveys is greater when one or more of the following factors is present :

Rapidly growing organization: It is critical to find out how employees feel about their jobs, the hospital and their fit and future within it.

Highly competitive industry: In an industry like health care, turn over minimization and productivity and creativity maximization are keys to success. Staying in touch with employees is necessary to facilitate continued competitiveness.

5. Survey instrument

The survey questions were developed during a series of discussions. Since, to the best of our knowledge, this is the first survey of its kind in TU, a unique set of questions was developed that the authors believed would be the best to capture the data they sought to gather (see Appendix A).

6. Sample & sampling

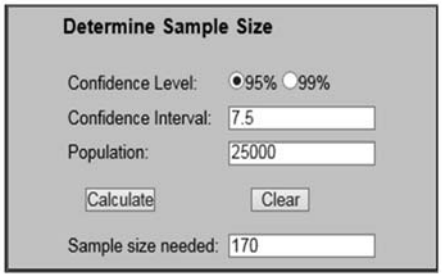
Sample size refers to the number of participants or observations included in a study. This number is usually represented by n. The size of a sample influences two statistical properties; the precision of our estimates and the power of the study to draw conclusions. Following is a calculation of sample size depending on a population of about 25000 (Academic and Nonacademic) workers in Taibah University which results in a sample of about 170. Online questionnaire responses received from University workers were 186 which satisfy sample size requirements.

Sample Size:

$$ss = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Correction for Finite Population:

$$new\ ss = \frac{ss}{1 + \frac{ss-1}{pop}}$$



Every member of the sampling frame has the potential to be selected for the study. Selection is random, and the probability of a member being chosen can be calculated. Knowing the probability

of selection allows us to generalize to the population.

7. Reliability of measurement tool

Reliability and validity are important concepts in research. Surveys are commonly used to measure program outcomes. However, to yield accurate information, surveys must be both reliable and valid. Reliability refers to two things. First, reliability means the researchers would get similar results if they repeated their questionnaire soon afterwards with the same workers. The "repeatability" of the questionnaire would be high. This is called **test-retest reliability**. The other aspect of reliability concerns the consistency among the questions. Because all the questions relate to depression, you would expect all the answers to be fairly consistent.

8. Reliability statistics

The following Table (1) gives a summary for reliability analysis results for each category of the questionnaire and for all items within each category in the scale.

Table 1. Reliability statistics for survey main categories

Category of satisfaction	Cronbach's Alpha	Cronbach's Alpha based on standardized Items	N of items
A	.932	.933	10
B	.951	.951	10
C	.818	.823	6
D	.894	.893	8
Survey total	.968	.968	34

A Cronbach's Alpha coefficient is approximately 0.97 so we conclude that this scale has excellent reliability. More in-depth analysis is depending on the correlation among factors in each part of the questionnaire. For more details refer to Appendix B.

9. Findings

- In terms of ages, about 60% of respondents lies in age interval from 30 up to 45.
- Only about 11% of respondents have a private health insurance.
- Responses of a question asking to describe the health status of respondents and their families came as follow; about 78% have good health status, about 17% have acceptable (not good not bad) health status, about 5% have bad health status. Table (2) shows more details.

Table 2. Health status of respondents and their families

		Valid percent	Cumulative percent
Valid	Very good	27.3	27.3
	Good	50.8	78.1
	Acceptable	16.4	94.5
	Non-satisfactory	1.1	95.6
	Non-satisfactory at all	3.8	99.5
	Don't know	.5	100.0

- Responses of a question asking about the number of monthly frequent visits to Taibah University medical units came consistent with responses of health status question where about 75% have at most only one visit a month (close to the percent of healthy respondents) and about 25% have more than one visit a month (close to the percent of non-healthy respondents). More details appear in Table (3).

Table 3. Monthly frequent visits to Taibah University Medical Units

		Valid percent	Cumulative percent
Valid	0	23.4	23.4
	1	52.2	75.5
	2	16.3	91.8
	3	4.9	96.7
	4 or more	3.3	100.0
	Total	100.0	

- Responses of a question asking employees of the university about their preference level for each health care category providers show that private hospitals come at the top with 47.3% of respondents, government hospitals come second with preference level of 34.9%, Taibah University Medical Units come third with 32.3%, private doctors at fourth level with 8% and finally primary health centers come last with the minimum preference level of 7% of respondents (For details see Appendices). It should be noted that the total percentages preference is not 100 where it is allowed to respondent to select more than one choice.
- Tables from 4 to 8 introduces summary for respondents' answers of each item within each category (section) of questions of the questionnaire.

Table 4. Summary of responses of each item within the first category

Item		Agree %	Disagree %	No opinion
A1	Satisfied number of medical unites	39	40	21
A2	Satisfied geography distribution of medical units	28	37	35
A3	Satisfied daily work time	45	37	18
A4	Satisfied weekly work time	43	36	21
A5	Emergency available 24-hours a day	21	43	36
A6	Specialist clinics	33	40	27
A7	Satisfied number of specialists	27	43	30
A8	Satisfied number of nurses	33	35	32
A9	Satisfied medical labs	28	42	30
A10	Satisfied scan units	23	38	39

Table 5. Summary of responses of each item within the second category

Item		Agree %	Disagree %	No opinion %
B1	Physicians have a high level of efficiency	45	27	28
B2	Good and fine treatment by a physician consistent with the values and ethics of his profession	68	16	16
B3	physician interested and deal responsibly with patients	65	15	20
B4	Doctor doing his best in the diagnosis and treatment of patients	59	23	18
B5	Favoritism or discrimination by physicians	54	22	24
B6	Doctor is committed to objectivity when determining the varieties and quantities of medication	50	19	31
B7	Nursing staff is characterized by a high level of efficiency and professionalism	45	23	32
B8	Radiology and laboratory technicians are characterized by a high level of efficiency and professionalism.	42	39	19
B9	Test results that what laboratories perform is reliable	44	25	31
B10	Radiology reports are reliable	41	22	37

Table 6. Summary of responses ofeach item within the third category

Item		Agree %	Disagree %	No Opinion %
C1	Distinctive and sophisticated handling of pharmacist consistent with ethics of his profession	69	13	18
C2	Medicines, relatively, have long-term expiration dates	52	21	27
C3	Physician be aware of specific medicines need to be disbursed	59	13	28
C4	Pharmacist delivers medication as specified in medical recipe	70	15	15
C5	All varieties of medicine available	41	36	23
C6	Favoritism or discrimination by pharmacist	44	27	29

Table 7. Summary of responses ofeach item within the fourth category

Item		Agree %	Disagree %	No opinion %
D1	High degree of efficiency and excellence of administrative staff of the medical unit	49	25	26
D2	Good reception from the administrative staff	64	18	18
D3	Long-waiting time for a medical service	53	25	22
D4	Ideal mechanism of organizing and archiving medical files	45	30	25
D5	Easy access to medical service in specialized clinics	51	23	26
D6	Easy access to medical service in dental clinic, especially in emergency situations	31	39	30
D7	Known information about the dates of the work of doctors in specialized clinics	45	33	22
D8	Medical Unit Affairs, including the dates of the work of doctors in specialized clinics available and constantly updated on the University's website	33	30	37

Table 8. Summary of responses of each item within the fifth category

Item		Agree %	Disagree %	No opinion %
E1	Overall, I get the health service in a perfect time	49	31	20
E2	Generally, I get effectively medical care from the university medical unit	40	37	23
E3	Generally I have a complete satisfaction for the overall health care I receive from the university medical unit	43	33	24

Main remarks can be highlighted as follows:

- First, there is an agreement between the percentages of non-healthy respondents and overall un-satisfaction level.
- Second, the dispersion of disagree responses is considerably less than other responses which gives more reliability for the disagree answers.
- Third, there are some aspects that need few improvements so that satisfaction levels can be raised, in particular items A3, A4, B1, B5, B6, B7, B8, B9, B10, C2, C5, C6, D1, D3, D4, D5, D7.
- Last, there are some aspects that need critical improvements so that satisfaction levels can be raised considerably, in particular items A1, A2, A5-A10, D6, D8.

10. Survey items' contribution to the overall satisfaction

In general, nearly the main four satisfaction categories have an almost equal contribution to the overall satisfaction level. The third category came first with a 26.82% contribution followed by the second category (26.17%) then the fourth category (24.73%) and last came the first category with a 22.29% contribution to the overall satisfaction level.

A similar analysis can be run with respect to items within each category. Relative contributions of items to main categories are displayed in Table (9).

Table 9. Relative contribution (item to total) within each satisfaction category

Item number	Category A	Category B	Category C	Category D
1	10.51%	9.58%	18.63%	13.08%
2	9.92%	10.94%	16.20%	14.18%
3	11.03%	10.49%	17.51%	13.11%
4	10.89%	10.15%	17.93%	12.09%
5	9.36%	10.17%	14.55%	13.06%
6	9.86%	10.12%	15.17%	10.79%
7	9.54%	9.76%		12.06%
8	9.96%	9.57%		11.63%
9	9.54%	9.67%		
10	9.40%	9.55%		
Sum	100.00%	100.00%	100.00%	100.00%

Satisfaction about daily and weekly working hours of the clinical units within the university came in the first place within the satisfaction category of "sufficiency of medical units" with a contribution level of 11.03%. For category B (quality and proficiency level of medical service), good hospitality and ethics of communication by physicians had the greatest contribution level of 10.94% followed by the feel of responsibility and interest given to the patient by the physician (10.49%). The proficiency and accuracy of pharmacists was the factor most influencing satisfaction about medication, as the second category of satisfaction, having a relative contribution of 18.63%. For the items in category D (procedures for having medical service), good hospitality from the admin staff was the most contributing with a 14.18% contribution to the total satisfaction about procedures.

11. Statistical analysis and results

Percentages were calculated from the data and are presented in Table form along with raw numbers. A two sided test of differences between proportions was used to compare results. An alpha level of 0.05 was used as the standard for statistical significance. Due to the nature of each variable being dichotomous a chi squared test is warranted. This test is also representative of a test of difference in proportions. Data were coded into a spread sheet. SPSS statistical software was used in the analysis.

12. Hypothesis testing

The following is a list of our research hypotheses regarding factors affecting the overall satisfaction levels of individuals in Taibah university with regard to the quality of medical insurance services provided by the university.

Hypothesis code	Hypothesis to text	Statistical test
H1	The overall satisfaction level is the same for individuals visiting Taibah University's medical units and those who do not.	Mann-Whitney
H2	The overall satisfaction level is the same for Saudis and non-Saudis	
H3	The overall satisfaction level is the same for individuals who have private insurance and those who don't have a private insurance plan.	
H4	The overall satisfaction level is the same for academics and non-academics	
H5	The overall satisfaction level is the same for male and female respondents	
H6	The overall satisfaction level is the same with respect to different age categories	Kruskal-Wallis
H7	The overall satisfaction level is the same with respect to family size	
H8	The overall satisfaction level is the same with respect to years of experience	
H9	The overall satisfaction level is the same with respect to level of income	
H10	The overall satisfaction level is the same with respect to level of education	
H11	The overall satisfaction level is the same with respect to the overall health status	

Nonparametric statistical tests, Mann-Wittney for two samples and Kruskal-Wallis for more than two samples, have been adopted since most variables have a categorical nature. Summary results and decisions for testing the previous hypotheses are displayed in the following Table:

Table 10. Summary results of hypotheses testing

Hypothesis code	Factor	P-value	Decision
H1	Visiting the university's medical units	0.076	Rejection at 10% significance level
H2	Nationality (Saudis and non-Saudis)	0.001	Rejection at 1% significance level
H3	Having private insurance plan	0.000	Rejection at 1% significance level
H4	Job category (academics and non-academics)	0.023	Rejection at 5% significance level
H5	Gender (male and female)	0.944	Acceptance
H6	Age category	0.002	Rejection at 1% significance level
H7	Family size	0.478	Acceptance
H8	Years of experience	0.329	Acceptance
H9	Level of income	0.103	Acceptance
H10	Level of education	0.080	Rejection at 10% significance level
H11	Overall health status	0.005	Rejection at 1% significance level

Results revealed that overall satisfaction level for respondents does not vary significantly according to gender, family size, job experience and monthly income. Satisfaction level for male reached 59% approximately compared to 62% for females. Satisfaction ranged from 55% to 65% within different experience categories (less experience more satisfaction) but with no statistically significance differences. Same for family size (the less is the family size the more is the satisfaction level). For different levels of income, satisfaction is approximately the same (around 60%).

For factors having statistically different satisfaction levels within its categories, further analysis is performed to check if differences among individuals are statistically significant for each main category of satisfaction (A to D).

In general, satisfaction level for those who visit medical units in the university is slightly greater than those who don't (62% to 54%) and this remains the case for each satisfaction category except for procedures where the satisfaction was almost the same.

Non-Saudis were more satisfied about health and medical services provided by the university units (with an approximately 66% satisfaction level) compared to Saudis (55% satisfaction) for all categories of satisfaction and overall.

Respondents who are privately medical insured are, overall and within each satisfaction category, more satisfied than people with no private medical insurance (76% compared to 58% overall satisfaction level). The previous conclusion is the case for different job categories where academics had a 62% satisfaction compared to 55% for non-academics.

Similar conclusion about satisfaction levels for different categories of education can be remarked. The more is the educational level the more is the overall satisfaction (64% to 49%). A more detailed analysis showed that there is no statistically significant effect for educational level on the level of satisfaction about medication and health service procedures within the university units, whereas differences are statistically significant with respect to the remaining three categories of satisfaction.

Finally, results indicate that individuals with good health are more satisfied with health services provided by the university compared to those with poor or less-good health status.

Conclusions

- There is a need for expanding the range of medical services provided by Taibah University through its medical units whether in quantity or quality to assure better medical care for its employees and providing the service in an ideal time range with as few waiting times as possible.
- There is a need to develop mechanisms of managing Medical Files of employees of the university.
- Develop methods relevant to procedures for the submission to university medical units and methods of getting medical information services.
- Encouraging the establishment of courses, seminars and workshops for employees of the University medical units in order to develop their professional ethics and performance to deal with patients
- Encourage studies concerned with seeking the possibility that Taibah University to create a program for private medical insurance for its employees in certain private hospitals controlled by certain determinants.
- There is a need for a general emergency unit with qualified staff available at all times of the day. This also applies for dental care, especially in cases of emergency.

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Appendix A

Age in years	
Less than 20	☐
20 to less than 30	☐
30 to less than 45	☐
45 to less than 60	☐
60 above	☐
Sex	
Male	☐
Female	☐
Nationality	
Saudi	☐
Non Saudi	☐
Number of dependents (family size):	
1	☐
2	☐
3	☐
4	☐
5 or more	☐
Job category:	
Academic	☐
Non academic	☐
Years of experience at Taibah University:	
Less than 2	☐
From 2 to less than 5	☐
From 5 to less than 10	☐
10 or more.	☐
Average monthly income in Saudi Reyals	
Less than 6000	☐
6000 to less than 12000	☐
12000 to less than 20000	☐
20000 or more	☐
Highest qualification	
PhD	☐
Master	☐
Bachelor	☐
Not a high degree	☐
Do you have a private health insurance	
Yes	☐
No	☐
How do you evaluate the overall health condition for you and your family	
Very good	☐
Good	☐
Acceptable	☐
Non satisfactory	☐
Completely non satisfactory	☐
Number of average monthly visits to Taibah University Medical units	
0	☐
1	☐
2	☐
3	☐
4 or more	☐
Which of the following is your first priority to visit when having a medical condition	
Taibah University medical units	☐
Governmental hospitals and units	☐
Private hospitals and units	☐
Private clinics/doctors	☐

Sufficiency and spread of university medical units

		Strongly agree	agree	Neutral	disagree	Strongly disagree
1	The number of medical units in Taibah University is sufficient.	☐	☐	☐	☐	☐
2	Medical units of the university are well spread.	☐	☐	☐	☐	☐
3	Daily working hours of university medical units are sufficient	☐	☐	☐	☐	☐
4	Working days per week of university medical units are sufficient	☐	☐	☐	☐	☐
5	There is a 24 hours emergency department in each university medical unit.	☐	☐	☐	☐	☐
6	In each unit, there are specialized clinics which cover most medical departments	☐	☐	☐	☐	☐
7	There are sufficient number of doctors with different specialists in each unit.	☐	☐	☐	☐	☐
8	There are sufficient number of nursing staff in each unit.	☐	☐	☐	☐	☐
9	There are comprehensive and well-equipped labs.	☐	☐	☐	☐	☐
10	There are comprehensive and well-equipped radiation units.	☐	☐	☐	☐	☐

Quality and professionality of medical service

		Strongly agree	agree	Neutral	disagree	Strongly disagree
1	Doctors in the university medical units are efficient and professional.	☐	☐	☐	☐	☐
2	Doctors treat patients in an ethical way.	☐	☐	☐	☐	☐
3	Doctors show concern and responsibility.	☐	☐	☐	☐	☐
4	Doctors do their best effort to examine and treat patients.	☐	☐	☐	☐	☐
5	Doctors are fair with all patients regarding prescribing relevant medications.	☐	☐	☐	☐	☐
6	Doctors are objective when prescribing regardless medication stock or should go considerations.	☐	☐	☐	☐	☐
7	Nursing staff are efficient and professional.	☐	☐	☐	☐	☐
8	Lab staff are efficient and professional.	☐	☐	☐	☐	☐
9	I completely trust Taibah University's lab results.	☐	☐	☐	☐	☐
10	I completely trust all types of medical reports issued by Taibah University medical units.	☐	☐	☐	☐	☐

Medication and medical supplements

		Strongly agree	agree	Neutral	disagree	Strongly disagree
1	Pharmacists communicate with patients in an ethical professional attitude.	☐	☐	☐	☐	☐
2	Expiry dates of medications I get from university pharmacy are appropriate compared to medications I get from private pharmacies.	☐	☐	☐	☐	☐
3	I feel that doctors tend to prescribe specific medications for pharmaceutical considerations.	☐	☐	☐	☐	☐
4	Pharmacists give medications exactly as in the prescription.	☐	☐	☐	☐	☐
5	Most medications are available all time in the university pharmacy.	☐	☐	☐	☐	☐
6	I feel there are discriminatory practices in the university pharmacy according to patient's job or nationality or other factors.	☐	☐	☐	☐	☐

Procedures

		Strongly agree	agree	Neutral	disagree	Strongly disagree
1	Managerial/secretary staff in the university medical units are well qualified.	☐	☐	☐	☐	☐
2	Managerial/reception staff in the university medical units treat patients ethically and in a friendly manner.	☐	☐	☐	☐	☐
3	I wait more than I expect to be served.	☐	☐	☐	☐	☐
4	I find filing and archiving system in the university medical units appropriate.	☐	☐	☐	☐	☐
5	It is easy to get the medical service from specialized clinics within the unit.	☐	☐	☐	☐	☐
6	It is easy to get dental service especially in emergency cases.	☐	☐	☐	☐	☐
7	I know the specialized-clinics' medical staff timetable before visiting the university medical unit.	☐	☐	☐	☐	☐
8	All information about university medical units are available and up-to-date on the university website.	☐	☐	☐	☐	☐

Overall satisfaction

		Strongly agree	agree	Neutral	disagree	Strongly disagree
1	In general, I have the medical service in a good time for my job commitments.	☐	☐	☐	☐	☐
2	In general, I have a quality medical service from Taibah university such that there is no need to seek other options outside the university.	☐	☐	☐	☐	☐
3	In general, I am completely satisfied with the medical service I get from Taibah university medical units.	☐	☐	☐	☐	☐

Appendix B

SPSS sample output

Reliability

Reliability statistics

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
.968	.968	34

Item-total statistics

	Scale mean if liem deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha if item deleted
A[1]	104.48	704.427	.656	.704	.967
A[2]	104.64	708.379	.636	.666	.967
A[3]	104.32	706.017	.647	.828	.967
A[4]	104.34	701.929	.725	.859	.966
A[5]	104.84	709.933	.665	.656	.967
A[6]	104.56	708.586	.669	.742	.967
A[7]	104.72	709.998	.683	.752	.967
A[8]	104.50	707.022	.707	.742	.966
A[9]	104.68	707.136	.675	.749	.967
A[10]	104.66	709.375	.681	.740	.967
B[1]	104.26	709.789	.653	.687	.967
B[2]	103.77	705.975	.728	.833	.966
B[3]	103.84	704.312	.753	.863	.966
B[4]	103.99	703.432	.738	.862	.966
B[5]	104.01	702.675	.749	.799	.966
B[6]	104.05	703.180	.755	.788	.966
B[7]	104.15	703.167	.785	.766	.966
B[8]	104.13	708.833	.737	.825	.966
B[9]	104.19	703.343	.747	.828	.966
B[10]	104.15	705.726	.746	.823	.966
C[1]	103.61	709.064	.694	.829	.967
C[2]	104.06	709.368	.635	.720	.967
C[3]	103.82	717.257	.615	.615	.967
C[4]	103.68	710.301	.624	.809	.967
C[5]	104.42	707.340	.679	.726	.967
C[6]	104.27	735.184	.219	.510	.969
D[1]	104.09	703.607	.748	.829	.966
D[2]	103.83	706.384	.726	.785	.966
D[3]	104.05	725.261	.388	.486	.968
D[4]	104.34	702.738	.685	.693	.967
D[5]	104.09	701.910	.753	.751	.966
D[6]	104.62	706.074	.656	.657	.967
D[7]	104.26	707.046	.641	.749	.967
D[8]	104.41	705.433	.742	.779	.966

Reliability statistics: inter-item correlation matrix

	A[1]	A[2]	A[3]	A[4]	A[5]	A[6]	A[7]	A[8]	A[9]	A[10]
A[1- Satisfied number of Medical Unites]	1.000	.732	.585	.590	.561	.533	.655	.525	.472	.503
A[2- Satisfied geography distribution of Medical Units]	.732	1.000	.593	.614	.533	.459	.577	.532	.481	.543
A[3- Satisfied daily work time]	.585	.593	1.000	.875	.573	.486	.527	.559	.437	.465
A[4- Satisfied weekly work time]	.590	.614	.875	1.000	.614	.521	.581	.605	.461	.456
A[5- Emergency available 24-Hours a day]	.561	.533	.573	.614	1.000	.607	.637	.668	.579	.611
A[6- Specialist clinics]	.533	.459	.486	.521	.607	1.000	.710	.608	.555	.586
A[7- Satisfied number of specialists]	.655	.577	.527	.581	.637	.710	1.000	.669	.631	.657
A[8- Satisfied number of nurses]	.525	.532	.559	.605	.668	.608	.669	1.000	.652	.604
A[9- Satisfied medical labs]	.472	.481	.437	.461	.579	.555	.631	.652	1.000	.773
A[10- Satisfied scan units]	.503	.543	.465	.456	.611	.586	.657	.604	.773	1.000

Inter-item correlation matrix

	E[1]	E[2]	E[3]
E[1]	1.000	.709	.725
E[2]	.709	1.000	.802
E[3]	.725	.802	1.000

NPar tests
Mann-Whitney test

Ranks

	Nationality	N	Mean Rank	Sum of ranks
Sufficiency and spread of university medical units	Saudi	102	76.32	7784.50
	Non Saudi	82	112.63	9235.50
	Total	184		
Quality and professionality of medical service	Saudi	102	79.10	8068.50
	Non Saudi	82	109.16	8951.50
	Total	184		
Medication and medical supplements	Saudi	102	85.95	8766.50
	Non Saudi	82	100.65	8253.50
	Total	184		
Procedures	Saudi	102	84.86	8656.00
	Non Saudi	82	102.00	8364.00
	Total	184		
Overall satisfaction level	Saudi	102	80.27	8188.00
	Non Saudi	82	107.71	8832.00
	Total	184		

Test statistics

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedures	Overall satisfaction level
Mann-Whitney U	2531.500	2815.500	3513.500	3403.000	2935.000
Wilcoxon W	7784.500	8068.500	8766.500	8656.000	8188.000
Z	-4.600-	-3.811-	-1.868-	-2.172-	-3.473-
Asymp. Sig. (2-tailed)	.000	.000	.062	.030	.001

Notes: a. Grouping variable: Nationality.

Mann-Whitney test

Ranks

	Have a private health insurance	N	Mean Rank	Sum of ranks
Sufficiency and spread of university medical units	No	163	87.17	14208.50
	Yes	20	131.38	2627.50
	Total	183		
Quality and professionality of medical service	No	163	87.42	14250.00
	Yes	20	129.30	2586.00
	Total	183		
Medication and medical supplements	No	163	87.71	14297.50
	Yes	20	126.93	2538.50
	Total	183		
Procedures	No	163	87.25	14222.00
	Yes	20	130.70	2614.00
	Total	183		
Overall satisfaction level	No	163	87.06	14191.00
	Yes	20	132.25	2645.00
	Total	183		

Test statistics[a]

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedures	Overall satisfaction level
Mann-Whitney U	842.500	884.000	931.500	856.000	825.000
Wilcoxon W	14208.500	14250.000	14297.500	14222.000	14191.000
Z	-3.525-	-3.341-	-3.135-	-3.466-	-3.601-
Asymp. Sig. (2-tailed)	.000	.001	.002	.001	.000

Notes: a. Grouping variable: Have a private health insurance.

Mann-Whitney test

Ranks

	Visiting university medical units	N	Mean rank	Sum of ranks
Sufficiency and spread of university medical units	No	43	76.21	3277.00
	Yes	141	97.47	13743.00
	Total	184		
Quality and professionality of medical service	No	43	77.10	3315.50
	Yes	141	97.20	13704.50
	Total	184		
Medication and medical supplements	No	43	78.76	3386.50
	Yes	141	96.69	13633.50
	Total	184		
Procedures	No	43	85.65	3683.00
	Yes	141	94.59	13337.00
	Total	184		
Overall satisfaction level	No	43	79.86	3434.00
	Yes	141	96.35	13586.00
	Total	184		

Test statistics[a]

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedures	Overall satisfaction level
Mann-Whitney U	2331.000	2369.500	2440.500	2737.000	2488.000
Wilcoxon W	3277.000	3315.500	3386.500	3683.000	3434.000
Z	-2.293-	-2.168-	-1.940-	-.965-	-1.778-
Asymp. Sig. (2-tailed)	.022	.030	.052	.335	.075

Notes: a. Grouping variable: Visiting university medical units.

Kruskal-Wallis test

Ranks

	Age	N	Mean rank
Sufficiency and spread of university medical units	20 to less than 30	25	73.10
	30 to less than 45	112	88.04
	45 to less than 60	48	115.16
	60 above	1	175.50
	Total	186	
Quality and professionality of medical service	20 to less than 30	25	81.50
	30 to less than 45	112	86.96
	45 to less than 60	48	113.38
	60 above	1	171.50
	Total	186	
Medication and medical supplements	20 to less than 30	25	87.86
	30 to less than 45	112	86.17
	45 to less than 60	48	112.88
	60 above	1	126.00
	Total	186	
Procedures	20 to less than 30	25	84.72
	30 to less than 45	112	85.82
	45 to less than 60	48	115.32

Ranks (cont.)

	Age	N	Mean rank
	60 above	1	126.00
	Total	186	
Overall satisfaction level	20 to less than 30	25	78.86
	30 to less than 45	112	86.36
	45 to less than 60	48	116.25
	60 above	1	167.00
	Total	186	

Test statistics[a,b]

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedure s	Overall satisfaction level
Chi-square	14.851	11.563	8.995	11.226	14.253
df	3	3	3	3	3
Asymp. sig.	.002	.009	.029	.011	.003

Notes: a. Kruskal Wallis test; b. Grouping variable: Age in years

Kruskal-Wallis test

Ranks

	Highest education	N	Mean rank
Sufficiency and spread of university medical units	PhD	97	104.79
	Master	21	85.93
	Bachelor	44	76.89
	Not a high degree	21	70.67
	Total	183	
Quality and professionality of medical service	PhD	97	101.94
	Master	21	82.00
	Bachelor	44	82.94
	Not a high degree	21	75.07
	Total	183	
Medication and medical supplements	PhD	97	98.56
	Master	21	81.24
	Bachelor	44	81.26
	Not a high degree	21	94.98
	Total	183	
Procedures	PhD	97	97.21
	Master	21	84.93
	Bachelor	44	84.43
	Not a high degree	21	90.86
	Total	183	
Overall satisfaction level	PhD	97	101.59
	Master	21	83.50
	Bachelor	44	80.50
	Not a high degree	21	80.31
	Total	183	

Test statistics[a,b]

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedures	Overall satisfaction level
Chi-square	12.938	7.613	4.256	2.227	6.815
df	3	3	3	3	3
Asymp. sig.	.005	.055	.235	.527	.078

Notes a. Kruskal Wallis test; b. Grouping variable: Highest qualification.

Kruskal-Wallis test

Ranks

	Your overall health condition	N	Mean rank
Sufficiency and spread of university medical units	Very good	50	94.86
	Good	93	96.05
	Acceptable	30	89.37
	Non satisfactory	2	48.00
	Completely non satisfactory	7	28.57
	Total	182	
Quality and professionality of medical service	Very good	50	104.48
	Good	93	91.96
	Acceptable	30	83.65
	Non satisfactory	2	37.25
	Completely non satisfactory	7	41.86
	Total	182	
Medication and medical supplements	Very good	50	110.96
	Good	93	91.01
	Acceptable	30	75.43
	Non satisfactory	2	52.75
	Completely non satisfactory	7	38.93
	Total	182	
Procedures	Very good	50	104.13
	Good	93	92.22
	Acceptable	30	81.87
	Non satisfactory	2	58.25
	Completely non satisfactory	7	42.50
	Total	182	
Overall satisfaction level	Very good	50	104.69
	Good	93	93.40
	Acceptable	30	80.63
	Non satisfactory	2	39.50
	Completely non satisfactory	7	33.43
	Total	182	

Test statistics[a,b]

	Sufficiency and spread of university medical units	Quality and professionality of medical service	Medication and medical supplements	Procedures	Overall satisfaction level
Chi-square	12.318	12.076	17.796	10.775	14.986
df	4	4	4	4	4
Asymp. sig.	.015	.017	.001	.029	.005

Notes: a. Kruskal Wallis test; b. Grouping variable: Your overall health condition.