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ORIGINAL ARTICLE

Effectiveness of Health Insurance Project; Women Satisfaction Regarding Quality of Ante-natal Services

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ABSTRACT

Objective: This study aimed to evaluate the effectiveness of the universal health insurance project regarding the quality of health care with antenatal care services.

Materials and methods: A descriptive comparative study carried out at ten Primary Health Care (PCH) centers affiliated to Port-said and Damietta governorates. Multi-stage sampling probability technique used for selecting these centers, simple random sample of 460 women chosen. Data was collected through two tools; women's satisfaction questionnaire, and Support Tool for Improving Quality of Antenatal Care. **Results:** the study results revealed that 69.1% of women were unsatisfied with the antenatal care services and available resources provided by the traditional insurance. On the other hand, 79.1% of women receiving universal health insurance were satisfied with the services provided.

Conclusion: level of satisfaction was higher among women using universal health insurance regarding the recent health care services, cleanness, arrangement of medical facilities, availability of resources and criteria of service.

Keywords: Antenatal care, Satisfaction, Quality measures, Universal Health Insurance System.

INTRODUCTION

Antenatal care (ANC) is a term that refers to a range of services given to pregnant mothers delivered from conception until start of child delivery aimed to improve pregnancy-outcome and the health or condition of both newborn and mother (Uji et al., 2017). The quality of ANC is described as universal care that is measurably safe, effective, women-centered, and uniformly administered in a timely manner that is affordable to the population and efficiently uses resources and services (World Health Organization, 2016). According to the WHO, 536,000 women die global each year as a result of pregnancy, childbirth, or postpartum complications. The majority of these deaths occur in low-resource settings, and the majority of them could be avoided. In developing countries, 99 percent of all maternal deaths occur (WHO, 2018). ANC benefit pregnant mothers by finding problems could harm pregnancy (Lakew, Ankala & Jemal, 2018). Primary-healthcare (PHC) is the most important service of healthcare and is the woman's first contact and interaction with health-care organization. The PHC is also an indicator of the quality of health care delivery because it prompts compliance and satisfaction (Abo Ali & Shehata, 2019).

Women's satisfaction is regarded as one of the most important indicators for assessing the quality of health care services in general, and particularly PHC with medical advice, service utilization, and treatment (Ademuyiwa, Opeke, & Odetola, 2020). The most important factor in determining the gap between actual care provided and care that should have been provided is women's perceptions (Sodeinde et al., 2020& Ademuyiw et al., 2020). Women's satisfaction encompasses all of the following aspects: availability of resources, convenient infrastructure, and proper outcome. It has been demonstrated that the health care providers' and services in the PHC meet the clients' desired expectations, goals, and preferences (Abo Ali & Shehata, 2019).

Significance of the Study: Women's satisfaction evaluation has become a standard part of evaluating a healthcare system, and meeting women's expectations has become one of the primary goals of healthcare providers (Emiru, Alene & Debelew, 2020).

Subject and Methods:

Design and setting: A descriptive comparative study carried out at ten primary health care centers, including five in Port Said governorate (the first Arab unit, Kuwait unit, Fatima El-Zahra unit, Omar Ben Al-Khattab & El-Herfeen centre) and five in Damietta (the first medical centre, Al Barshia unit, Kafr Saad centre, El-Said El Gadeed unit, and Ras Al Bar unit).

Subjects and Sample: The study was conducted with a sample from two groups of women that were selected through a multi-stage probability sampling technique.

PHC Centers Sample: Damietta City has 14 primary health care centres dispersed over six districts (zones). The researcher chose five districts (zones) at random. Then pick a random centre from each district. Each of the five zones had one centre or unit chosen at random. While Port Said has 21 primary health care centres divided over five geographical zones, one facility or unit was chosen at random to represent each zone. The following calculation was used to choose 46 women from each primary health care unit. The selected women were chosen by a simple random technique from the appointment reservation list at each unit. Total sample was 460 women.

Inclusion Criteria:

- Pregnant women, family planning, residents in Damietta or Port Said City.
- Has utilized the specific primary health care center at least twice during the last year.

Exclusion Criteria:

- The women whose physical or mental health status prevented them from responding to the data collection sheet.

Data collection tools: Data was gathered using two tools of data collection. The first tool was prepared and developed by the researchers based on a review of pertinent literature, and include two parts:

The first part: It included the personal attributes of the women, such as age, number of children, crowding index, income, and type of visit. It also involved some questions regarding medical history and previous visits to the center.

The second part: It was used to assess women satisfaction regarding the service provided. It comprised two main parts (structure, process and outcome). It covered different aspects. The women's satisfaction questionnaire is comprised of seventeen items.

Scoring system: Answers were on a five-point Likert scale, asking for agreement or disagreement with statements about the provided services. Each item was scored using a modified five-point Likert scale. The women will be satisfied with 60% or more, and unsatisfied with score less than 60%.

The second tool, named "Support Tool for Improving Quality of Antenatal Care," aims to outline evidence-based, high-impact ANC interventions and quality of care measures (e.g., input, process,

and outcome indicators) for use by policymakers and program managers working to improve the quality of antenatal care for pregnant women.

Fieldwork: 460 women were studied. The researchers interviewed women three days a week from 9 a.m. to 12 p.m. The data was taken from January to December of the same year. After introducing themselves, the researchers conveyed the study's goal to each woman in the waiting area. The initial data collection technique was an interview structured questionnaire that the women filled out with the researcher's aid. Written in English, this questionnaire was translated into Arabic. The researcher used the second data gathering tool to assess each woman's prenatal care. The researchers filled out questionnaires. Women were chosen based on preset sample selection criteria. The researchers were present during the questionnaire filling. Each participant's interview tool took 15–20 minutes to complete.

Statistical design: The Statistical Package for the Social Sciences (SPSS, version 23.0) was used for data analysis. The Wilcoxon test and Monte Carlo test were used to determine if any difference existed between clients' satisfaction and quality of care. Chi-square test was used to determine association between satisfaction level with quality of care and personal characteristics of women. Spearman correlation analysis was used to examine the correlation between quality and satisfaction. A p-value of 0.05 was used to determine statistical significance.

RESULTS

Table 1 shows that 36.9% of the analysed sample women were aged 20 to 25, with a mean age of 28.85 6.09. Table (2) shows that UHIS women were more satisfied than TIS women with recent health care services, cleanliness, layout of medical facilities, resource availability, and service criteria. Table 3 shows no significant differences between the examined groups of women in different centres in both groups (Port-Said and Damietta). In the health care centres, UHIS specialty were more satisfied than TIS (Figure 1). Table (4) demonstrated that UHIS users were happier than TIS users on all items.

Table (5) showed that UHIS has better ANC quality than TIS. Figure (2) shows that women utilising the UHIS had better satisfaction levels with ANC than women using the TIS. Table (6) shows that there is no statistical association between UHIS use and satisfaction. Table (7) shows a substantial positive association between UHIS opinion assessments and overall satisfaction and quality. Table (8) shows a statistically significant positive link between women's overall satisfaction with antenatal care, structure, procedure, and result (p=0.001).

Table 1: personal attributes of the studied women (n=460.)

Items	Frequency	Percent
Age (years):		
• <20	64	13.9
• 20-<25	170	36.9
• 25-<30	138	30.0
• 30-<35	62	13.5
• ≥35	26	5.7
Mean ±SD	28.85 ± 6.09	
Education		
• Illiterate	20	4.3
• Read and write	24	5.2
• Primary	14	3.0
• Preparatory	21	4.6
• Secondary	202	43.9
• University	179	38.9
Occupational::		
• No	162	35.2
• Yes	255	55.4
• Retired	43	9.3
No. of children		
• No	64	13.9
• Yes	396	86.1
• 1	56	12.2
• 2	144	31.3
• 3 and more	196	42.6
Crowd index		
• <2	293	63.7
• ≥2	167	36.3
Monthly income:		
• Sufficient	346	75.2
• Insufficient	114	24.8
Type of visit		
• New consultation	307	66.7
• Follow up	153	33.3

Table 2: Opinions evaluation of women regarding the primary health care centers.

Items	Women using TIS (n=230)		Women using UHIS (n=230)		Z (p) value
	No	%	No	%	
Type visit reservation:-					
- by phone	99	43.1	174	75.7	4.091
-- without appointment	131	56.9	56	24.3	(0.091)
Opinion on evaluating the service and available resources provided by insurance system					
Dissatisfied	159	69.1	48	20.9	12.021
Satisfied	71	30.9	182	79.1	(0.003*)
Satisfied about the cleanliness and arrangement of the medical center's facilities					
Dissatisfied	143	62.2	25	10.9	10.653
Satisfied	87	37.8	205	89.1	(0.006*)
Opinion about the service provided they meet all the criteria and satisfaction you required					
Dissatisfied	118	51.3	44	19.1	5.973
Satisfied	112	48.7	186	80.9	(0.047*)
Evaluation of service and available resources that were previously provided (before the beginning of UHIS).					
Dissatisfied	127	55.2	139	60.4	1.811
Satisfied	103	44.8	91	39.6	(0.198)
The service of center differed from the previous one.					
Dissatisfied	182	79.1	35	15.2	15.841
Satisfied	48	20.9	195	94.8	(0.001*)
You advise your family and friends to visit the medical (obstetrics) center.					
No	174	75.7	71	30.9	11.394
Yes	56	24.3	159	69.1	(0.004*)

Z value of Wilcoxon W test *: Statistically significant at p ≤ 0.05

Table 3: Satisfaction Levels between centers.

		Level of satisfaction				χ^2	^{MC}p
City	Health Care Centers	Satisfaction		Un-satisfaction			
		No.	%	No.	%		

Port-said (n = 230)	Total recent satisfaction	(n = 180)		(n = 50)			
	The first Arab unit	41	22.8	5	10.0		
	Kuwait unit	36	20.0	10	20.0	MC 3.650	0.063
	Fatima El-Zahra unit	33	18.3	13	26.0		
	Omar Ben Al-Khattab	31	17.2	15	30.0		
	El-Herfeen center	39	21.7	7	14.0		
Damietta (n = 230)	Total recent satisfaction	(n = 58)		(n = 172)			
	The first medical center	12	20.7	34	19.8		
	Al Barshia unit	7	12.1	39	22.7	MC 2.872	0.109
	Kafr Saad center	15	25.9	31	18.0		
	El- Said El Gadeed unit	11	19.0	35	20.3		
	Ras Al Bar center	13	22.3	33	19.2		

MC: Monte Carlo *: Statistically significant at p ≤ 0.05

Table 4: Comparison between levels of satisfaction among different health care systems

Items of process satisfaction	Women using TIS (n=230)				Women using UHIS (n=230)				Z	P
	Satisfaction		Un-satisfaction		Satisfaction		Un-satisfaction			
	No.	%	No.	%	No.	%	No.	%		
Total Structure	110	47.8	120	52.2	178	77.4	52	22.6	6.239	0.049*
- Environmental features (Accessibility, Cleanness).	109	47.4	121	52.6	180	78.2	50	21.8	6.981	0.042*
- Transportation routes to the center.	158	68.7	72	31.3	167	72.6	63	27.4	1.201	0.103
- Pathways, medical rooms well identified.	97	42.2	133	57.8	179	77.8	51	22.2	6.643	0.044*
- Availability of equipment & supplies.	75	32.6	155	67.4	187	81.3	43	18.7	8.146	0.012*
Total Process	86	37.4	144	62.6	167	72.6	63	27.4	9.762	0.009*
- Timing of work in the center	44	19.1	186	80.9	159	69.1	71	30.9	10.923	0.005*
- The positive features available in the center (as Fetal examination).	103	44.8	127	55.2	183	79.6	47	20.4	6.802	0.043*
- Satisfaction of role the physician.	99	43.1	131	56.9	158	68.7	72	31.3	4.265	0.092
- Satisfaction of role the nurse.	112	48.7	118	51.3	174	75.7	56	24.3	7.016	0.032*
- Satisfaction role of administrative staff	97	42.2	133	57.8	110	47.8	120	52.2	1.011	0.261
- General service at center as Pregnancy care.	109	47.4	121	52.6	180	78.2	50	21.8	6.782	0.041*
- Follow up measures every visit.	59	25.7	171	74.3	198	86.1	32	13.9	13.871	0.001*
- Levels of service for women with special need as (Nutritional care, social care).	87	37.8	143	62.2	179	77.8	51	22.2	8.762	0.013*
Total Outcome	64	27.8	166	72.2	200	86.9	30	13.1	12.753	0.003*
- Achieving the desired service.	91	39.6	139	60.4	219	95.2	11	4.8	14.762	0.001*
- Referral to another diagnostic step.	47	20.4	183	79.6	206	89.6	24	10.4	13.628	0.002*
- Taking the prescribing medication from the health care center.	25	10.9	205	89.1	195	94.8	35	15.2	19.654	0.001*
- Determination of the follow-up visit.	66	28.7	164	71.3	198	86.1	32	13.9	12.059	0.004*
- Feeling loyalty to this place.	89	38.7	141	61.3	201	87.4	29	12.6	10.651	0.006*
Overall Satisfaction	88	38.3	142	61.7	182	79.1	48	20.9	11.711	0.004*

Z value of Wilcoxon W test, *: Statistically significant at p ≤ 0.05,

Table 5: Quality of Care Measures for antenatal care in different health care systems

Intervention Areas	Women using TIS (n=230)				Women using UHIS (n=230)				Z	p
	done		Not-done		done		Not-done			
	No.	%	No.	%	No.	%	No.	%		
- Estimating gestational age (GA).	150	65.2	80	34.8	221	96.1	9	3.9	8.043	0.021*
- Measure blood pressure (BP); diagnose.	122	53.1	108	46.9	210	91.3	20	8.7	11.239	0.002*
- Assess uterine size.	136	59.1	94	40.9	195	84.8	35	15.2	10.982	0.003*
- Assess for multiple pregnancy, fetal lie.	90	39.1	140	60.9	189	82.2	41	17.8	12.871	0.001*
- Determine fetal heart rate (FHR).	125	54.3	105	45.7	207	90.0	23	10.0	9.614	0.004*
- Assess for anemia (treatment).	93	40.4	137	59.6	164	71.3	66	28.7	7.541	0.032*
- Test for infections: Syphilis	24	10.4	206	89.6	77	33.5	153	66.5	2.629	0.098
- Test for infections: HIV.	30	13.1	200	86.9	54	23.5	176	76.5	1.909	0.143
- Test for infections: Tuberculosis (TB).	52	22.6	178	77.4	76	33.1	154	66.9	1.103	0.216
- Test for infections: Other (STIs).	10	4.4	220	95.6	37	16.1	193	83.9	1.237	0.189
- Administer tetanus toxoid (TT).	210	91.3	20	8.7	226	98.2	4	1.8	1.828	0.137
- Prescribe/provide IFA.	196	85.2	34	14.8	228	99.1	2	0.9	3.954	0.095
- Calcium supplementation.	97	42.2	133	57.8	223	96.9	7	3.1	10.934	0.003*
- Review birth plan and complication.	24	10.4	206	89.6	184	80.0	46	20.0	16.923	0.001*
- Counsel according to gestational age: nutrition; danger signs; activity and rest.	17	7.4	213	92.6	198	86.1	32	13.9	19.018	0.001*
- Provide emotional and psychological support: family support.	19	8.3	211	91.7	140	60.9	90	39.1	14.376	0.001*
- Review postpartum danger signs.	33	14.4	197	85.6	161	70.0	69	30.0	13.642	0.001*
- Review follow-up dates.	15	6.5	215	93.5	177	76.9	53	23.1	15.564	0.001*
- Classify pregnancy (normal, high-risk, acute problem) and referral if indicated.	36	15.7	194	84.3	151	65.7	79	34.3	11.932	0.002*
Overall Quality	72	31.3	158	68.7	164	71.3	66	28.7	10.195	0.003*

Z value of Wilcoxon W test, *: Statistically significant at p ≤ 0.05

Table 6: Relationship between satisfaction among women using UHIS and their socio-demographic characteristics (n=230)

	Satisfaction(n=182)		Un-satisfaction(n=48)		χ^2	P
	No.	%	No.	%		
Age (years):						
• <20	27	14.8	7	14.6	1.050	0.902
• 20-<25	65	35.7	17	35.4		
• 25-<30	48	26.5	16	33.3		
• 30-<35	29	15.9	5	10.4		
• ≥35	13	7.1	3	6.3		
Education:						
• Illiterate	8	4.4	2	4.2	4.189	0.114
• Read and write	10	5.5	3	6.3		
• Primary	2	1.1	2	4.2		
• Preparatory	8	4.4	3	6.3		
• Secondary	87	47.8	22	45.7		
• University	67	36.8	16	33.3		
Occupational:						
• No	74	40.8	16	33.3	0.674	0.714
• Yes	96	52.7	24	50.0		
• Retired	12	6.6	8	16.7		
No. of children						
• No	27	14.8	5	10.4	0.996	0.318
• Yes	155	85.2	43	89.6		
Crowd index						
• <2	109	59.9	26	54.3	1.109	0.292
• ≥2	73	40.1	22	45.7		
Income:						
• Sufficient	115	63.2	29	60.4	0.037	0.847
• Insufficient	67	36.8	19	39.6		
Type of visit						
• New consultation	129	70.9	30	62.5	1.928	0.722
• Follow up	53	29.1	18	37.5		

χ^2: Chi square test *: Statistically significant at p ≤ 0.05

Table 7: Correlation between women evaluation opinions with satisfaction and quality measures among different health systems

Items	Overall satisfaction		Quality measures	
	TIS	UHIS	TIS	UHIS
Opinion on evaluating the service and available resources provided by insurance system.	r=.106 p=(.101)	r=.340* p=(.001*)	r=.149 p=(.211)	r=.201* p=(.021*)
Satisfied about the cleanliness and arrangement of the medical center's facilities.	r=.049 p=(.984)	r=.263* p=(.002*)	r=.032 p=(.331)	r=.279* p=(.013*)
Opinion about the service provided they meet all the criteria and satisfaction you required.	r=-.428-* p=(<.001*)	r=.254* p=(.003*)	r=.118 p=(.301)	r=.302* p=(.006*)
Evaluation of service and available resources that were previously provided (before the beginning of UHIS).	r=.132 p=(.142)	r=.261* p=(.003*)	r=.049 p=(.541)	r=.311* p=(.004*)
The service of center differed from the previous one.	r=.072 p=(.283)	r=.263* p=(.002*)	r=.114 p=(.621)	r=.198* p=(.027*)
You advise your family and friends to visit the medical (obstetrics) center.	r=-.303-* p=(.001*)	r=.381* p=(.001*)	r=-.382-* p=(.001*)	r=.179* p=(.046*)

r: Spearman coefficient *: Statistically significant at p ≤ 0.05 .

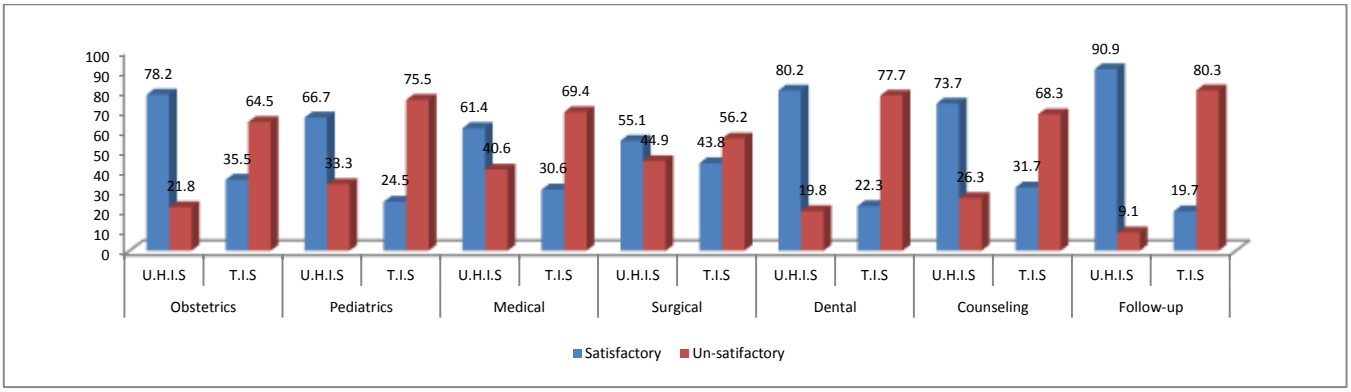

Figure 1: Levels of satisfaction between specialties inside the health care center in the study sample

U.H.I.S= Universal Health Insurance System. T.I.S= Traditional Insurance System.

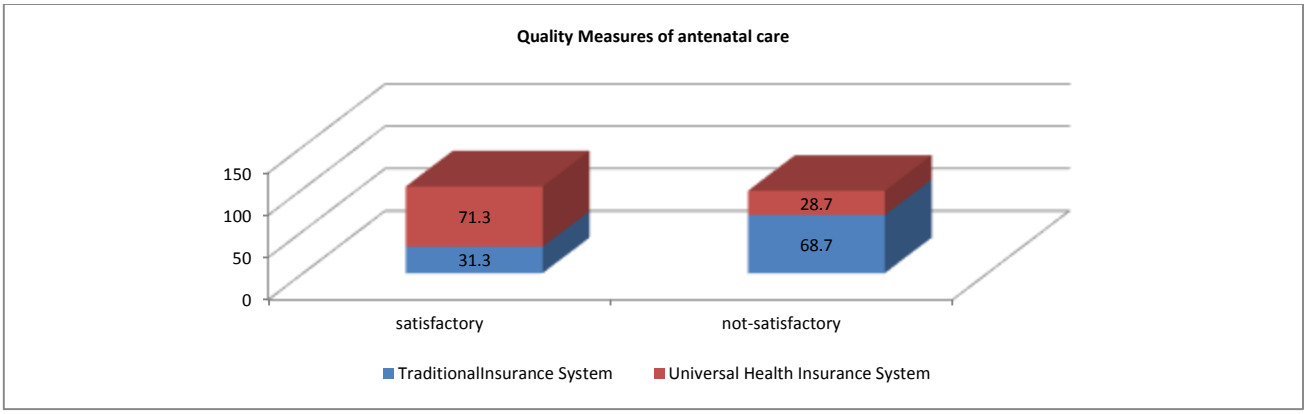

Figure 2: Quality Measures Levels of antenatal care among the studied women.

Table 8: Correlation between quality measures of antenatal care with women's overall satisfaction with UHIS

Satisfaction Level	Quality measures	
	r_s	P
Structure	0.391	<0.001*
Process	0.416	<0.001*
Outcome	0.371	<0.001*
Total satisfaction	0.427	<0.001*

r_s: Spearman coefficient *: Statistically significant at p ≤ 0.05

DISCUSSION

Antenatal care (ANC) is the key entry point for a pregnant woman to receive a broad range of health promotion and preventive services that benefit the health of both the mother and the baby (Lakew, Ankala, & Jemal, 2018). According to the results, the percent of satisfaction was higher in women with UHIS than in women with TIS regarding the quality of health care services, cleanliness, arrangement of medical facilities, availability of resources, and criteria of services.

The current finding is also closely similar to the study by Ismail and Essa (2017) in El-Beheira Governorate, Egypt, found that more than half of subjects were unsatisfied regarding antenatal-care provided by their TIS. Also current results is similar to the finding of Arafat (2015) in Alexandria, Egypt, who concluded that only one third of the studied cases were highly satisfied regarding care received from TIS.

In addition, the study results showed that more than half of the women using TIS were unsatisfied with the center's location, and 31.3% were unsatisfied with the availability of transport methods to reach the center. The results of the study are consistent with Montasser et al., (2012) about Egyptian women's satisfaction. Their results revealed that nearly three-quarters of participants were not-satisfied with the accessibility of the ANC service. Meanwhile, 78.2% and 72.6% of women using UHIS were satisfied. This was in concordance with a study conducted in Ethiopia which reported the percentage of satisfaction was about 60% (Lakew, Ankala & Jemal, 2018).

Electronic health records are introduced as part of UHIS, assisting physicians and nurses in their roles and, as a result, facilitating good communication with women by making all information about women's health history available at all times. In addition, physicians and nurses have participated in a number of communication skills training workshops. These results are in line with those of Lamadah & Elsaba (2012), who found that more than two thirds of the clients were very satisfied with provider client interaction.

Regarding satisfaction with the performance of nurses, Ghobashi & Khandekar (2008) conducted a study about satisfaction of mothers with antenatal care. They stated that most of the mothers were satisfied.

The results of the present study indicated that 68.7% of studied centers providing the TIS had unsatisfactory level of quality. While 71.3% of centers providing UHIS had satisfactory level of quality. This finding is supported by Ismail and Essa(2017) who revealed that only 14.3% of studied HIS centers had high quality.

CONCLUSION

According to the findings of the current study, quality measures of antenatal care were higher in the universal insurance system than in the traditional insurance system. In addition, some quality measures show statistically significant differences between TIS and UHIS. According to the findings, the UHIS is a promising plan for reducing the fragmentation of Egypt's health-care system. Significant improvements in service quality have been made.

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