Responsiveness of the health insurance and private systems in Alexandria, Egypt

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Background

Responsiveness to patients is a key indicator for measuring the health system performance with respect to nonhealth aspects. This study aimed to compare responsiveness of the Health Insurance Organization (HIO) with the private healthcare system and also to assess the importance of the different responsiveness domains according to the study population's perspective.

Participants and methods

Patients attending both inpatient and outpatient settings of both organizations were interviewed (200 outpatients and 200 inpatients from each selected hospital) using the WHO questionnaire. The questionnaire elicits the ratings of the respondents on their experiences with the healthcare system over the past 12 months in terms of responsiveness domains, respondents' inability to access medical care because of financial barriers, and their ranking of the relative importance of responsiveness domains.

Results

Almost twice the number of HIO participants reported poor responsiveness compared with the private organization participants (27.8 vs. 56.8%, respectively). The outpatient setting scored much favorably compared with the inpatient setting at the HIO (52.3% of respondents reported poor responsiveness in the outpatient setting compared with 76.3% in the inpatient setting); however, they were comparable in the private setting. Communication, prompt attention, and dignity were the domains most frequently rated as the most important (36.0, 32.0, and 14.7%, respectively). The type of organization (HIO vs. private organization) and setting of care (inpatient vs. outpatient) were significant predictors of responsiveness score ($P < 0.001$).

Conclusion and recommendations

The overall rating of the patients on responsiveness of the HIO system is low, especially when compared with the private sector. The results emphasize the importance of establishment of systems for monitoring the performance of the providers and discontinuation of the services for the nonperformers.

Keywords:

Egypt, health insurance system, organization, private, responsiveness

Introduction

The Egyptian Health Insurance Organization (HIO) was founded in 1964 with the aim of providing healthcare services to the public sector workforce. By the late 1990s, the private sector workforce, families of insured individuals, children enrolled in schools, and those under the school age were brought under insurance coverage. Presently, the health sector reform aims at further expansion of the health insurance services to achieve a universal coverage [1]. The HIO services are, to a great extent, underutilized [1,2]. It has been recorded that, on the national level, only 41.3% of HIO beneficiaries utilize HIO services when purchasing care [1] and that the private sector appears to be the provider of choice owing to the perceived better quality by the purchasers of healthcare [2]. On reviewing the healthcare financing systems in Egypt, 23% of the health expenditure was found to be accounted for by the private health sectors compared with 8% by health insurance [3].

It is more important to reduce the out-of-pocket payment of the HIO enrollees before attempting to expand the coverage. Assessing customers' perception of quality is very useful for policy makers as a means of improving the utilization of health services [4]. One approach to measure customers' perception of quality is to measure the 'responsiveness', which is a concept developed by the WHO to measure how well the healthcare systems meet the legitimate expectations of the population in terms of non-health-enhancing aspects [3,4]. The concept relates to the respect given to the patient and patient's orientation and consists of eight domains. Dignity, autonomy, and confidentiality are the three domains intended to measure the respect for patients, whereas communication, social support for hospitalized patients, prompt attention, quality of basic amenities, and choice of the healthcare provider are the domains intended to measure the patient's orientation [5]. A related questionnaire was also designed by the WHO to measure the domains of responsiveness.

From the policymaker's viewpoint, it is possible to improve responsiveness with minimal investment in technology and human resources, as well as more rapidly, compared with improvements in the health status [6]. The present study aims to compare the level of responsiveness of the HIO and private healthcare systems in an attempt to capture the possible areas of improvement in the HIO system, with subsequent improvement in utilization of the services.

Participants and methods

Study design and setting

This was a descriptive cross-sectional study carried out at two hospitals and two outpatient clinics. One hospital and one outpatient clinic were affiliated to the HIO and the others were affiliated to the private sector. The HIO provides comprehensive services to its beneficiaries with multiple referral levels, starting from general practitioner, specialist, and consultant ambulatory care to hospital emergency department and inpatient care.

Sampling

The HIO hospital was selected randomly among three HIO hospitals in Alexandria. The selected hospital is a 660-bed hospital and had an average occupancy rate of 65% during the study period. As for the outpatient clinics, the third region of health insurance was selected randomly among six health insurance regions. The Health Insurance Clinic was selected by simple random sampling among six clinics in the third health insurance region. As for the private settings, private hospitals in Alexandria were stratified into small-sized (< 50 beds), medium-sized (50–99 beds), and large-sized hospitals (> 100 beds) [7]. One hospital was selected randomly from the large-sized strata. The selected hospital is a 120-bed hospital and had an average occupancy of 92% during the study period. Patients were selected from the inpatient and outpatient setting of the same hospital using systematic random sampling. With a power of 80% to detect a significant prevalence of poor responsiveness of 34.3% among the patients, an α error of 0.05, and precision of 5%, the minimal required sample size was found to be 200 patients (200 outpatients and 200 inpatients from each selected hospital). The sample size was calculated using G-Power software (G-Power version 3, Düsseldorf, Germany).

Data collection methods

Face-to-face interviews were conducted to collect data using the Arabic version of the WHO Health and Responsiveness Survey Questionnaire [8]. The questionnaire is composed of four sections: the first section elicits respondents' ratings of their experiences with the healthcare system over the past 12 months in terms of the responsiveness domains – prompt attention, dignity, communication, autonomy, confidentiality, choice, basic amenities, and social support. Inpatients were asked questions from all eight domains but outpatients were excluded from the social support domain. Each domain comprises three to four statements. The response format varied from the frequency of reporting (1 = always,

2 = usually, 3 = rarely, and 4 = never) to the rating (1 = very good, 2 = good, 3 = moderate, 4 = bad, and 5 = very bad) and level of the problem (1 = no problem, 2 = minor problem, 3 = moderate problem, 4 = severe problem, and 5 = extremely severe problem). In the second section, the respondents were asked whether they were unable to access medical care because of financial barriers. In the third section, the responsiveness domains were explained and respondents were asked to select the most and the least important domains. The fourth section is composed of questions on the demographic and health characteristics of the respondents.

Statistical analysis

The responsiveness domains were dichotomized into good responsiveness (code 0) and poor responsiveness (code 1). For questions using the response categories 'never, sometimes, usually, and always', a poor responsiveness was defined as the percentage of individuals responding in the 'never' or 'sometimes' categories. For questions using the response categories 'no problem, mild problem, moderate problem, severe problem, and extremely severe problem', the latter three categories were used to indicate a poor responsiveness. For rating questions using the response categories 'very bad, bad, moderate, good, and very good', poor responsiveness was defined as the percentage of individuals responding 'very bad', 'bad', or 'moderate'.

A multiple linear regression model was used to examine the effect of demographic and health characteristics on the overall responsiveness. The dependent variable is the overall responsiveness that was calculated through recoding statements constituting each dimension in a positive direction, that is, from the worst to the best possible level (1 'very bad', 2 'bad', 5 'very good', 1 'never'.0.4 'always', and 1 'extreme problem', 5 'no problem'). After recoding, all the dimensions (eight for the inpatient setting and seven for the outpatient setting) were summated to yield an overall responsiveness score. The independent variables were: organization, setting of care, self-assessed health, nationality, affordability, age, sex, education, and income. All independent variables were dichotomized in the model. The organization was dichotomized as: private = 0 and HIO = 1; health was coded as: good health = 0 and bad health = 1; nationality was coded as: Egyptian = 1 and non-Egyptian = 0; affordability was coded as: unable to pay = 1 and able to pay = 0; age was coded as: more than 45 years = 1 and less than 45 years = 0; sex was coded as: female = 1 and male = 0; education was coded as: illiterate/basic education = 1 and educated = 0; and income coded as: less than 1000 EGP = 1 and more than 1000 EGP = 0.

The raw data was coded and entered into the computer using statistical packages for social sciences, version 16 (SPSS Inc., Chicago, Illinois, USA). The 5% level was used as the cutoff value for statistical significance.

Results

A total of 800 participants were interviewed. Half of the participants were attendants of a Health Organization

(HIO) hospital and clinic and the other half were attendants of a private hospital and a clinic affiliated to that hospital. About two-thirds of the respondents in both organizations were men (61.5% at the HIO hospital and 68.5% at the private organization). More than three-quarters of the HIO participants were more than 45 years of age, whereas two-thirds of the private organization participants were 45 years old. The majority of participants of the private organization had received higher education (89.5%) (University degree and above) compared with only 26.0% of HIO participants. Almost all of the private organization participants earn more than 1000 EGP per month compared with only one-third of those at the HIO earning the same amount. Twenty-seven percent of the private organization participants rated their health as being poor compared with 18.0% of HIO participants. Six percent of the private organization participants stated that they were unable to obtain healthcare during the past 12 months because of financial barriers, whereas this percentage reached 29.0% for HIO participants. All HIO participants were Egyptians compared with 72.0% of private organization participants. The difference between both organizations was statistically significant for all demographic and health characteristic variables (Table 1).

As shown in Table 2, on an average, about twice the number of HIO participants reported poor responsiveness compared with private organization participants (27.8 vs. 56.8%, respectively). The HIO system performed best on the social support domain (5.6% reporting negative responsiveness) and worst on the choice and autonomy domain (96.6 and 89.0%, respectively). The private system performed best on the social support domain (3.33% reporting negative responsiveness) and worst on the autonomy and communication domain (42.3% reporting negative responsiveness for both domains).

On comparing the inpatient to outpatient settings, the overall percentage of poor responsiveness was comparable in both settings within the private organization (32.5% for inpatient compared with 30.2% for outpatient). In contrast, in the HIO, the outpatient setting compared much favorably with the inpatient setting (52.3% of respondents reported poor responsiveness in the outpatient setting compared with 76.3% in the inpatient setting) (Tables 3 and 4). This difference was most evident for the domains of confidentiality, basic amenities, and communication.

On asking the participants of both organizations to specify the most and the least important responsiveness domains, communication, prompt attention, and dignity were the three responsiveness domains most frequently rated as the most important. In contrast, social support, choice basic amenities, and autonomy were the three responsiveness domains least frequently rated as the most important (Table 5).

For detecting the predictors of the overall responsiveness score (higher score indicating better responsiveness), a multiple linear regression model of health and demographic characters on the total responsiveness score was developed. Using the enter method, a significant model emerged ($F_{9,790} = 291.992$, $P < 0.0005$). The model accounts for 76.6% of the variance in the responsiveness scores (adjusted $R^2 = 0.766$). The type of organization (HIO vs. private organization) and setting of care were

Table 1. Sociodemographic characteristics of the study sample

	[n (%)]		
	Health insurance	Private	P
Sex (male)	246 (61.5)	274 (68.5)	0.03
Age			<0.001
17–<30	20 (5.0)	140 (35.0)	
30–<45	50 (12.5)	132 (33.0)	
45–<60	162 (40.5)	92 (23.0)	
60–82	168 (42.0)	36 (9.0)	
Mean ± SD	56.9 ± 12.9	39.0 ± 14.4	
Health self-assessed as poor	72 (18.0)	108 (27.0)	0.002
Education			<0.001
Illiterate	116 (29.0)	2 (0.5)	
Basic/intermediate	180 (45.0)	40 (10.0)	
Higher education	104 (26.0)	358 (89.5)	
Income			<0.001
<1000	263 (65.8)	28 (7.0)	
>1000	137 (34.2)	372 (93.0)	
Nationality (Egyptian)	400 (100.0)	288 (72.0)	<0.001
Unable to pay for healthcare	116 (29.0)	24 (6.0)	<0.001

Table 2. Percentage of participants rating responsiveness as poor

Responsiveness domains	Health insurance hospital	Private hospital	P^*
Confidentiality	69.4	21.9	0.000
Social support	5.6	3.3	0.051
Basic amenities	54.3	31.6	0.000
Choice	96.6	27.0	0.000
Autonomy	96.0	42.3	0.000
Communication	52.2	42.3	0.000
Dignity	43.8	20.5	0.000
Prompt attention	36.6	34.0	0.181
Total	56.8	27.8	0.000

$*\chi^2$-test, $P < 0.005$.

Table 3. Percentage of participants reporting responsiveness as poor at ambulatory versus hospital inpatient care at health insurance settings

Responsiveness domains	Inpatient	Outpatient
Confidentiality	91.8	50.3
Basic amenities	81.0	27.6
Choice	99.2	93.8
Autonomy	98.0	94.0
Communication	69.5	35.0
Dignity	59.0	28.7
Prompt attention	36.0	37.3
Total	76.3	52.3

Table 4. Percentage of respondents reporting responsiveness as poor at ambulatory versus hospital inpatient care at health insurance settings

Responsiveness domains	Inpatient	Outpatient
Confidentiality	19.3	24.5
Basic amenities	31.6	31.6
Choice	26.5	27.5
Autonomy	40.0	44.6
Communication	41.7	43.0
Dignity	28.5	12.5
Prompt attention	40.0	28.0
Total	32.5	30.2

Table 5. The most and the least important responsiveness domains

Responsiveness domains	Most important	Least important
Confidentiality	3.0	11.5
Amenities	6.0	18.5
Choice	2.8	19.2
Autonomy	4.0	12.8
Communication	36.0	0.0
Dignity	14.7	0.8
Prompt attention	32.0	1.5

Table 6. Multiple linear regression of health and demographic characters on the total responsiveness score

Predictor variables	β	P
Organization		
HIO	−0.841	0.000
Private		
Setting of care		
Inpatient	−0.197	0.000
Outpatient		
Health		
Good	0.012	0.485
Poor		
Nationality		
Egyptian	0.000	0.973
Non-Egyptian		
Affordability		
Affordable	0.033	0.071
Unaffordable		
Age		
<45	−0.038	0.060
>45		
Sex		
Male	0.003	0.849
Female		
Education		
Illiterate/basic education	0.005	0.804
Intermediate/educated		
Income		
<1000	−0.005	0.841
>1000		

$F_{9,790} = 2.73$; total adjusted $R^2 = 0.766$.
HIO, Health Insurance Organization.

significant predictors of the responsiveness score ($P < 0.001$) (Table 6).

Discussion

Major improvements in healthcare systems could be achieved through improving responsiveness of the system even without major investments of funds [6]. The aim of the present study was to compare responsiveness of the HIO and private healthcare systems and also to compare responsiveness of the inpatient and outpatient settings in both systems. The study revealed two major findings. The first is the high percentage of respondents reporting poor responsiveness in both organizations compared with other studies (56.8% at the HIO and 27.8% at the private organization). In the present study, 56.8% of the HIO respondents and 27.8% of the private organization respondents reported poor responsiveness compared with 29% respondents in South Africa [9], 18.5% in Germany [10], and 23.5% in Lebanon [11]. The second is that the level of poor responsiveness was twice as high for the HIO hospital compared with the private one

(56.8% at the HIO hospital vs. 27.8% at the private hospital). In addition, the type of organization (HIO vs. private) was found to be a significant predictor for the overall responsiveness score ($P < 0.001$). Our results agree with those of a population-based survey comparing responsiveness of households that utilize public and private services in South Africa [9]. The results also agree with those of a study carried out among the public and private hospitals in cities of Egypt, namely Cairo, Giza, and Port Said, in which private hospitals performed significantly better compared with the public ones [12]. This could explain the tendency of the insured population to seek care at private facilities and to incur out-of-pocket costs. Private hospitals, unlike public ones, are not subsidized; thus, they are more inclined to be customer-focused in order to maintain or improve their market share and hence their financial viability and profitability [12].

The difference between the percentages of patients reporting poor responsiveness is significant for all domains of responsiveness, with the exception of social support and prompt attention. The difference was most evident for the domains of choice and autonomy. Our results agree with those of other studies carried out in Lebanon and Germany [10,11]. For the choice domain, the percentage of poor responsiveness was three times higher for the HIO hospital compared with the private one (96.6 vs. 27.0%, respectively); this could be explained by the fact that insured patients are allocated to the specified HIO clinics and hospitals according to their residence. The policy of the HIO system, unlike the private one, does not provide the opportunity for choosing or changing either the facility or the provider of care. Insurance reform strategies should consider the free choice of the provider and setting of care. One of the strategies applied internationally is to separate healthcare financing from the provision of services, – that is, to contract with public and private entities to provide services by allowing the enrollees to choose freely from among the different providers [13–17]; this should be coupled with providing the enrollees with adequate comparative information about provider performance (e.g. patient satisfaction) to be able to make an informed choice [14]. In this context, it is worthy to mention that the 'choice' domain was the second most frequent to be rated as least important (about one-fifth of the respondents rated it as the least important), and this result disagrees with that of another study carried out among the patients from eight European countries, in which the overwhelming majority of respondents expressed their need to be able to choose their healthcare providers [18]. Reluctance of Egyptian patients to exercise their right in choosing their providers was demonstrated in a WHO survey among 41 countries [19]. It could be attributed to the fact that HIO enrollees know in advance that the system does not allow them to choose from among the providers.

Autonomy was the worst performing domain for both systems (96.0% for the HIO hospital and 42.3% for the private hospital), and this finding agrees with that of a study carried out in Germany [10]. This could be explained by the paternalistic attitude of the healthcare providers, which is aggravated by the wide knowledge gap

between the provider and the patient, especially in the HIO setting, in which the majority of the respondents were illiterate or had just received basic education.

Among the study hospitals, 52.2% of the HIO respondents and 42.3% of the private organization respondents reported poor responsiveness in the 'communication' domain, which was the domain most frequently rated by the respondents as being the most important domain (36.0% rated it as the most important). Considering 'communication' an important domain is in accordance with other studies carried out in Germany and Thailand [10,20], in which communication was found not only to affect patient satisfaction but also their utilization of services [20]. The literature emphasizes that patients who receive clear communication from their providers are more likely to understand their health status, modify their behavior accordingly, and comply with their medication schedules [21,22]. Thus, it is increasingly important to conduct training programs that focus on sharpening the patient–provider communication skills.

Despite of its modest performance (34.0 and 36.6% reporting poor responsiveness at the private and HIO hospitals, respectively), 'prompt attention' was the second most frequent domain to be rated as important by the study participants (32% of respondents rated it as the most important domain). 'Prompt attention' has been rated as the most important domain in the studies carried out in Thailand and Lebanon [11,20] and the third most important domain for inpatients in Germany [10], agreeing with the literature stating that patients' perceptions on the waiting time predicts their overall satisfaction [23]. Long waiting time has been reported in several Egyptian healthcare settings affiliated to different health systems [24–26], calling for the importance of setting national waiting time targets, especially for urgent procedures [27].

The percentage of patients reporting poor responsiveness was comparable in the inpatient and outpatient settings in the private hospital (32.5% for inpatients compared with 30.2% for outpatients). In contrast, the outpatient setting compared favorably with the inpatient setting at the HIO hospital (52.3% of respondents reported poor responsiveness in the outpatient setting compared with 76.3% in the inpatient setting), agreeing with the studies carried out in Germany and Iran and disagreeing with those carried out in China and Lebanon [10,11,28,29]. The type of setting (inpatient vs. outpatient) was found to be a significant predictor for the overall responsiveness score ($P < 0.001$). At the HIO setting, the difference was greatest for the domains of confidentiality, amenities, and communication. The rooms at the HIO hospital can be shared by several patients and the beds are not even separated by curtains, which could breach the privacy of the inpatients. As for the communication domain, the difference in the rating favoring outpatient settings could be attributed to the greater need of hospitalized patients to receive health information owing to the acuity of their conditions, their unfamiliarity with the setting, and greater dependency [10].

Study limitations

A limitation of the present study was that responsiveness was measured for patients actually utilizing the healthcare services, thus limiting the ability to test the effect of responsiveness on the utilization of services. Another limitation is a possible Hawthorne effect (a phenomenon in which a study subject's responses are altered as a result of the subject's awareness of being under observation) as a result of interviewing patients at the hospital. This effect was reduced by emphasizing the independence of the interviewees.

Conclusion and recommendations

Responsiveness is an important parameter for assessing customers' perception of quality. The percentage of respondents reporting poor responsiveness in the HIO was twice as high as the private organization. The outpatient and inpatient settings were comparable in the private organization; however, in the HIO, the outpatient setting had lower percentages of poor responsiveness when compared with the outpatient setting. The respondents rated communication, prompt attention, and dignity as the most important responsiveness domains. The type of organization and setting of care were significant predictors for responsiveness scores.

The Egyptian Health Insurance system has a dual role, being the provider of health services and the financier of the system. This dual role results in a high managerial cost and the inability to properly monitor the quality and responsiveness of the system. Thus, it is recommended to separate healthcare financing and provision, whereby the system in charge for healthcare financing contracts with public and private providers for the establishment of systems for monitoring the providers' performance and for discontinuation of the services of nonperformers.

References

1 Shawky S. Could the employment-based targeting approach serve Egypt in moving towards a social health insurance model? East Mediterr Health J 2010; 16:663–670.

2 Nandakumar AK, Chawla M, Khan M. Utilization of outpatient care in Egypt and its implications for the role of government in health care provision. World Dev 2000; 28:187–196.

3 Gericke CA. Financing health care in Egypt: current issues and options for reform. J Public Health 2006; 14:29–36.

4 De Silva A. *A framework for measuring responsiveness. (GPE Discussion Paper Series: No.32)*. Geneva: World Health Organization.

5 Valentine N, Valentine N, de Silva A, Kawabata K, Darby C, CJL Murray, Evans DB. Health system responsiveness: concepts, domains and operationalization. In: Murray CJ, Evans DB, editors. *Health system performance assessment, debates, methods and empiricism*. Geneva: World Health Organization; 2003. pp. 574–596.

6 Darby C, Valentine N, Murray CJL, de Silva A. *Strategy of measuring responsiveness. (GPE Discussion Paper Series: No. 23)*. Geneva: World Health Organization.

7 Loux SL, Payne SMC, Knott A. Comparing patient safety in rural hospitals by bed count. Advances in Patient Safety 2005; 1:391–402.

8   World Health Organization (2005). *The health systems responsiveness analytical guidelines for surveys in the MCSS*. Geneva: World Health Organization 2005. Available at: *http://www.who.int/responsiveness/papers/MCSS_Analytical_Guidelines.pdf*.

9   Peltzer K. Patient experiences and health system responsiveness in South Africa. BMC Health Serv Res 2009; 9: doi: 10.1186/1472-6963-9-117.

10   Bramesfeld A, Wedegärtner F, Elgeti H, Bisson S. How does mental health care perform in respect to service users' expectations? Evaluating inpatient and outpatient care in Germany with the WHO responsiveness concept. BMC Health Serv Res 2007; 7: doi: 10.1186/1472-6963-7-99.

11   World Health Organization (2001). *Health System Responsiveness. Sample Report*. Geneva: World Health Organization 2001. Available at: *http://www.who.int/responsiveness/MCSS%20Sample%20Report.pdf*.

12   Mostafa MM. An empirical study of patients' expectations and satisfactions in Egyptian hospitals. Int J Health Care Qual Assur 2005; 18:516–532.

13   Pro-Poor Healthcare for Egypt. Egypt National Human Development Report. World Health Organization, United Nations Development Programme. 2005. Available at: *http://www.undp.org.eg/LinkClick.aspx?fileticket=EQIvELek7EY%3D&tabid=187&mid=675* [Accessed 24 September 2012].

14   Maarse H, Ter Meulen R. Consumer choice in Dutch health insurance after reform. Health Care Anal 2006; 14:37–49.

15   Sagan A, Panteli D, Borkowski W, Dmowski M, Domanski F, Czyzewski M, *et al.* Poland health system review. Health Syst Transit 2011; 13:1–193.

16   Jacobs B, Thomé J-M, Overtoom R, Sam SO, Indermühle L, Price N. From public to private and back again: sustaining a high service-delivery level during transition of management authority: a Cambodia case study. Health Policy Plan 2010; 25:197–208.

17   Gauri V, Cercone J, Briceño R. Separating financing from provision: evidence from 10 years of partnership with health cooperatives in Costa Rica. Health Policy Plan 2004; 19:292–301.

18   Coulter A, Jenkinson C. European patients' views on the responsiveness of health systems and healthcare providers. Eur J Public Health 2005; 15:355–360.

19   Valentine N, Darby C, Bonsel GJ. Which aspects of non-clinical quality of care are most important? Results from WHO's general population surveys of 'health systems responsiveness' in 41 countries. Soc Sci Med 2008; 66:1939–1950.

20   Liabsuetrakul T, Petmanee P, Sanguanchua S, Oumudee N. Health system responsiveness for delivery care in Southern Thailand. Int J Qual Health Care 2012; 24:169–175, art. no. mzr085.

21   Ciechanowski PS, Katon WJ, Russo JE, Walker EA. The patient-provider relationship: attachment theory and adherence to treatment in diabetes. Am J Psychiatry 2001; 158:29–35.

22   Bull SA, Hu XH, Hunkeler EM, Lee JY, Ming EE, Markson LE, Fireman B. Discontinuation of use and switching of antidepressants: Influence of patient-physician communication. JAMA 2002; 288:1403–1409.

23   Thompson DA, Yarnold PR, Williams DR, Adams SL. Effects of actual waiting time, perceived waiting time, information delivery, and expressive quality on patient satisfaction in the emergency department. Ann Emerg Med 1996; 28:657–665.

24   Mousa SM, Seifeldin IA, Hablas A, Elbana ES, Soliman AS. Patterns of seeking medical care among Egyptian breast cancer patients: relationship to late-stage presentation. Breast 2011; 20:555–561.

25   Zaky HHM, Khattab HAS, Ma NN. Experiences of women using reproductive health services in Egypt: one health system in two governorates. Qual Prim Care 2010; 18:345–347.

26   Nada KH, Barakat AA, Gipson R. Quality of care for obstetric emergencies in 4 general hospitals in Egypt: an observational study of delays in receiving care and blood bank services. East Mediterr Health J 2011; 17:19–25.

27   Dafoe W, Arthur H, Stokes H, Morrin L, Beaton L. Universal access: but when? Treating the right patient at the right time: access to cardiac rehabilitation. Can J Cardiol 2006; 22:905–911.

28   Rashidian A, Kavosi Z, Majdzadeh R, Pourreza AG, Pourmalek F, Arab M, Mohammad K. Assessing health system responsiveness: a household survey in 17 th district of Tehran. Iran Red Crescent Med J 2011; 13:302–308.

29   Kowal P, Naidoo N, Williams S, Chatterji S. Performance of the health system in China and Asia as measured by responsiveness. Health 2011; 3:638–646.