Patients' awareness of their medical conditions in multi-specialty outpatient clinics in Saudi Arabia

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ABSTRACT

الأهداف: تقييم إدراك المرضى ومدى وعيهم بتفاصيل حالتهم الصحية، وتحديد العوامل المؤثرة على إدراكهم، بالإضافة إلى تقييم مدى رضا المرضى عن توضيح طبيبهم وشرحه لتفاصيل حالتهم المرضية.

الطريقة: أجريت هذه الدراسة بطريقة مسحية مقطعية خلال شهر أكتوبر 2005م، في العيادات الخارجية – مستشفى الملك خالد الجامعي – الرياض – المملكة العربية السعودية. قام المشاركون في الدراسة بملء استبانة بشكل ذاتي، وتم تحليل البيانات باستخدام برنامج SPSS الإحصائي.

النتائج: شملت الدراسة 501 مريضاً، متوسط أعمارهم كان (45.6±16.8)، منهم 55% إناث و 29% من ذوي تعليم عالي. كان معظم المرضى (64.1%) يعرفون تشخيص حالتهم الصحية. ووجد ارتباط ذو دلالة إحصائية بين معرفة المريض بتشخيص مرضه وبين المستوى التعليمي، ومدة المرض، وتفاصيل أخرى عن المرض مثل اسم الدواء المستخدم، ومضاعفات المرض (p<0.05). كما تبين أن 20% فقط من المرضى يعرفون المضاعفات المتوقعة للمرض. وفي المقابل أبدى 70% من المرضى رضاهم عن توضيح أطبائهم لتفاصيل حالتهم الصحية. ووجد كذلك ارتباط ذو دلالة إحصائية بين رضا المرضى عن توضيح أطبائهم لحالتهم الصحية وبين معرفتهم للتشخيص(p=0.001)، ولمضاعفات المرض (p=0.014).

خاتمة: يتبن من هذه الدراسة قلة إدراك المرضى ووعيهم بتفاصيل حالتهم الصحية مما يستدعي انتباه الفريق الطبي لذلك، ومشاركة من هو مؤهل إيجابياً في هذا الدور. مع استخدام كافة الوسائل المتاحة لتوضيح الحالة الصحية للمرضى.

Objectives: To assess the patients' awareness of their medical conditions, identify the factors affecting their awareness, and assess patient's satisfaction with their doctors' explanations of medical conditions.

Methods: A cross-sectional study was conducted in October 2005 in the outpatient clinics of King Khalid University Hospital in Riyadh, Kingdom of Saudi Arabia. A self-administered questionnaire was used for data collection. The statistical package for Social Science was used for analysis.

Results: Five hundred and one patients were included in the study. The mean age was 45.6±16.8. Fifty-five percent were female and 29% were highly educated. Most of the patients (64.1%) knew their diagnoses. This was significantly associated with the educational level; chronicity of the disease, and the awareness of other issues related to their illness such as complications and name of their medications (p<0.05). Few patients (20%) knew complications of their diseases. Seventy percent of patients were satisfied with their doctors' explanation of their disease. Knowing the diagnosis (p=0.001) and the disease complications (p=0.014) were associated significantly with patients' satisfaction.

Conclusion: These figures are less than what they should be. Physicians must be advised of the importance of proper patient education. In addition, the lack of proper education by physicians demonstrated in this study should be compensated for by an increase in non-physician based education tools.

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Chronic medical illness has a major impact on the lives of the affected individuals and their families, often preventing performance of daily tasks and causing early retirement from work. Healthcare systems in which patients care for themselves were found to be consistently more successful at improving the clinical course of chronic disease.[1] The most important step in involving the patients in their own care is to increase their awareness and understanding of their conditions. In this regard, awareness is defined as knowing something of your illness and its importance.[2] Patient satisfaction, however, is a complicated phenomenon that is linked to patient's expectations, health status, and personal characteristics, as well as health system characteristics.[3] Patients base their expectations on many complicated factors and those expectations vary from one socio-demographic group to another.[3] Patient satisfaction questionnaires can be used as a useful tool to evaluate the performance of medical students during consultations and to measure patient satisfaction with different health care professional groups such as general practitioners, nurse practitioners, district nurses, and practice nurses.[4,5] This field of research is not sufficiently covered in Saudi Arabia. Therefore, we have chosen to study this topic on patients attending the outpatient medical clinics at King Khalid University Hospital in Riyadh, Kingdom of Saudi Arabia. We aimed to assess the overall patients' awareness of their medical conditions including the diagnoses, complications of their diseases, and their medications, identify the factors affecting their awareness, and assess patient's satisfaction with doctors' explanations of their medical conditions.

Methods. This cross-sectional study was conducted in October 2005 in the outpatient clinics of King Khalid University Hospital in Riyadh, Kingdom of Saudi Arabia. The study recruited consenting Saudi adults attending cardiology, endocrinology, pulmonology, gastroenterology, and neurology outpatient clinics. We excluded all patients who did not complete their questionnaires ideally. A self-administered 2-page questionnaire written in Arabic was formed considering the opinion of experts. The questionnaire was piloted and found to be understandable and easy to complete. The questionnaire included questions regarding demographic data (namely age, gender, nationality, educational level), patients awareness of their conditions (namely knowledge on diagnosis, complications, names of prescribed medications), and patient satisfaction regarding information given by the treating physicians. The satisfaction was assessed through (yes/no) response. The questionnaires were distributed by the research assistants. Research assistants help illiterate participants to complete the questionnaire. In addition, patients were asked to verify their answers by writing down diagnoses, complications, and names of prescribed medications. The ethical committee was consulted, and the study was approved.

Microsoft Excel was used to create the database, and the Statistical Package for the Social Sciences (SPSS version 12) was used for analysis. We used the chi-square and Fisher's exact test whenever appropriate. *P*-value considered significant at <0.05.

Results. Five hundred and one patients were included in the study. The mean age was 45.6±16.8. Fifty-five percent were female and 29% were highly educated. **Table 1** shows the details of demographic characteristics. In terms of knowing their diagnoses, 64.1% of patients knew their diagnoses. This was significantly associated with the educational level and chronicity of the disease ($p<0.05$), however, age and gender showed no significant relationship ($p>0.05$). There was a clear association between patients knowledge of their diagnoses and awareness of other issues related to their illness such as complications ($p<0.001$), and the name of their medications ($p=0.004$), **Table 2**. Only 20% of patients knew some of the complications of their diseases. This was also significantly correlated with educational level ($p=0.0001$) and chronicity of disease ($p=0.015$), but not with age ($p=0.45$) or gender ($p=0.23$), **Table 3**. At the time of the survey, 81.4% of our outpatients were on medications. Approximately 60% of them were able to list some of their medications. Educational level and age

Table 1 - Demographic characteristics of the participating patients.

Items	Frequency (%)
Age:	
≤20 years	28 (5.6)
21-30 years	89 (17.8)
31-40 years	89 (17.8)
41-50 years	107 (21.3)
51-60 years	91 (18.2)
>60 years	97 (19.3)
Gender:	
Male	224 (44.7)
Female	277 (55.3)
Education level:	
Illiterate	95 (19.0)
Primary school	86 (17.2)
Intermediate school	59 (11.8)
Secondary school	117 (23.3)
University	144 (28.7)
Department:	
Gastroenterology	94 (18.8)
Endocrinology	116 (23.1)
Pulmonary	89 (17.8)
Cardiology	106 (21.1)
Neurology	96 (19.2)
Total	**501 (100)**

Table 2 - Factors associated with patients' knowledge of the diagnosis.

Factor	Know of the diagnosis			*P*-value
	Yes	No	Total	
	n (%)			
Age:				0.36
≤20 years	20 (71.4)	8 (28.6)	28 (5.6)	
21-30 years	50 (56.2)	39 (43.8)	89 (17.8)	
31-40 years	63 (70.8)	26 (29.2)	89 (17.8)	
41-50 years	71 (66.4)	36 (33.6)	107 (21.3)	
51-60 years	58 (63.7)	33 (36.3)	91 (18.2)	
>60 years	59 (60.8)	38 (39.2)	97 (19.3)	
Total	**321 (64.1)**	**180 (35.9)**	**501 (100)**	
Gender:				0.4
Male	148 (66.1)	76 (33.9)	224 (44.7)	
Female	173 (62.5)	104 (37.5)	277 (55.3)	
Total	**321 (64.1)**	**180 (35.9)**	**501 (100)**	
Education:				0.0001
Illiterate	46 (48.4)	49 (51.6)	95 (19.0)	
Primary	50 (58.1)	36 (41.9)	86 (17.2)	
Intermediate	34 (57.6)	25 (42.4)	59 (11.8)	
High school	79 (67.5)	38 (32.5)	117 (23.3)	
Higher education	112 (77.8)	32 (22.2)	144 (28.7)	
Total	**321 (64.1)**	**180 (35.9)**	**501 (100)**	
Duration of the illness:				0.005
<1 year	17 (48.6)	18 (51.4)	35 (7.4)	
1-5 years	150 (62.8)	89 (37.2)	239 (50.7)	
5-10 years	69 (72.6)	26 (27.4)	95 (20.2)	
>10 years	78 (76.5)	24 (23.5)	102 (21.7)	
Total	**321 (64.1)**	**180 (35.9)**	**471 (100)**	
Know of complication:				
Yes	89 (89.0)	11 (11.0)	100 (20.0)	
No	232 (57.9)	169 (42.1)	401 (80.0)	0.0001
Total	**321 (64.1)**	**180 (35.9)**	**501 (100)**	
Know of medication:				0.004
Yes	176 (72.7)	66 (27.3)	242 (59.3)	
No	97 (58.4)	69 (41.6)	166 (40.7)	
Total	**321 (64.1)**	**180 (35.9)**	**408 (100)**	
Department:				0.0001
Respiratory	70 (78.7)	19 (21.3)	89 (17.8)	
Cardiology	78 (73.6)	28 (26.4)	106 (21.1)	
Gastrointestinal	57 (60.6)	37 (39.4)	94 (18.8)	
Endocrine	69 (59.5)	47 (40.5)	116 (23.1)	
Neurology	47 (49.0)	49 (51.0)	96 (19.2)	
Total	**321 (64.1)**	**180 (35.9)**	**501 (100)**	

of the patients had a significant effect on that (p<0.001), with the highest percentage among patients aged 21-40, **Table 3**.

Seventy percent of patients were satisfied with their doctors' explanation of their diseases with no significant influence of age, gender, educational level, or time lapsed since diagnosis (p>0.05). Knowing of the diagnosis (p=0.001) and the disease complications (p=0.014) were associated significantly with patients' satisfaction, **Table 4**.

Discussion. Patient education is an often neglected part of patient doctor interaction. Physicians are either not convinced of the value of education, have no time to perform proper education, or presume that patients are aware of their diagnoses while in fact, they may not be. The literature is abundant from many parts of the world and across many fields of medicine showing that there is often lack of proper patient information. One of these studies has demonstrated that most colorectal adenoma patients younger than 60 years of age are unaware of the familial implications of their diagnosis.[6] A recent survey in Canada, showed that both hypertensive patients and the public have very poor awareness regarding the complications of hypertension and its serious prognosis.[7]

In this study, only 60% of patients were able to list their diagnoses, 20% were able to name some expected complications of their illnesses, and 60% were able to name some of their medications, with obvious association between lacking information in these domains. These figures are less than what they should be. The expected explanation may include the limitation of the actual patient doctor exposure time due to a large number of patients seen in a short period of time or the lack of a doctor's insight regarding the importance of health education. The patients are more satisfied if they are informed of the diagnoses and the complications of their illness. Physicians must think of that while caring for their patients. It is known that an aware patient is an empowered patient, especially in chronic disease settings. An aware patient is more likely to share effectively and usefully in his/her own care and ask for and get more optimal care.[8] Moreover, the awareness of the seriousness of a disease can influence their patterns of behavior.

There are reports showing evidence that patient empowerment and education improve outcome in a number of disease processes. One such study showed that structured patient education of adults with type 2 diabetes resulted in improved glycemic control, reduced total cholesterol level, body weight, body mass index, and waist circumference, and reduced requirement diabetes medication at 14 months.[9] In a randomized multicenter study based in Munich, it was shown that within a 2-year period of psycho education in schizophrenic patients and their families such a program was related to a significant reduction in re-hospitalization rates from 41-58% and also a shortening of intermittent days spent in the hospital from 39-78 days.[10] Patient education in elderly patients with hypertension has also been shown to significantly enhance blood pressure control.[11] In another study on the effect of education in asthmatic patients, it was found that in the intervention group, there were fewer visits with acute asthma as compared to

Table 3 - Factors associated with patients' knowledge of the complications and their medications.

Factor	Know of complications			*P*-value	Know of medications			*P*-value
	Yes	No	Total		Yes	No	Total	
	n (%)				n (%)			
Age:				0.45				0.0001
≤20 years	3 (10.7)	25 (89.3)	28 (5.6)		13 (50.0)	13 (50.0)	26 (6.4)	
21–30 years	19 (21.3)	70 (78.7)	89 (17.8)		54 (74.0)	19 (26.0)	73 (17.9)	
31–40 years	18 (20.2)	71 (79.8)	89 (17.8)		48 (73.8)	17 (26.2)	65 (15.9)	
41–50 years	27 (25.2)	80 (74.8)	107 (21.3)		53 (62.4)	32 (37.6)	85 (20.8)	
51–60 years	18 (19.8)	73 (80.2)	91 (18.2)		40 (52.6)	36 (47.4)	76 (18.6)	
> 60 years	15 (15.5)	82 (84.5)	97 (19.3)		34 (41.0)	49 (59.0)	83 (20.4)	
Total	**100 (20.0)**	**401 (80.0)**	**501 (100)**		**242 (59.3)**	**166 (40.7)**	**408 (100)**	
Gender:				0.23				0.13
Male	50 (22.3)	174 (77.7)	224 (44.7)		119 (63.3)	69 (36.7)	188 (46.1)	
Female	50 (18.1)	227 (81.9)	277 (55.3)		123 (55.9)	97 (44.1)	220 (53.9)	
Total	**100 (20.0)**	**401 (80.0)**	**501 (100)**		**242 (59.3)**	**166 (40.7)**	**408 (100)**	
Education:				0.0001				0.0001
Illiterate	12 (12.6)	83 (87.4)	95 (19.0)		30 (37.5)	50 (62.5)	80 (19.6)	
Primary school	9 (10.5)	77 (89.5)	86 (17.2)		34 (48.6)	36 (51.4)	70 (17.2)	
Intermediate	8 (13.6)	51 (86.4)	59 (11.8)		25 (56.8)	19 (43.2)	44 (10.8)	
High education	26 (22.2)	91 (77.8)	117 (23.3)		62 (66.0)	32 (34.0)	94 (23.0)	
Higher education	45 (31.3)	99 (68.7)	144 (28.7)		91 (75.8)	29 (24.2)	120 (29.4)	
Total	**100 (20.0)**	**401 (80.0)**	**501 (100)**		**242 (59.3)**	**166 (40.7)**	**408 (100)**	
Illness duration:				0.015				0.15
<1 year	2 (5.7)	33 (94.3)	35 (7.4)		12 (44.4)	15 (55.6)	27 (6.9)	
1-5 years	47 (19.7)	192 (80.3)	239 (50.7)		90 (55.9)	71 (44.1)	161 (41.4)	
5- 10 years	20 (21.1)	75 (78.9)	95 (20.2)		54 (65.9)	28 (34.1)	82 (21.1)	
>10 years	31 (30.4)	71 (69.6)	102 (21.7)		75 (63.0)	44 (37.0)	119 (30.6)	
Total	**100 (20.0)**	**401 (80.0)**	**471 (100)**		**242 (59.3)**	**166 (40.7)**	**389 (100)**	
Department:				0.038				0.11
Gastrointestinal	15 (16.0)	79 (84.0)	94 (18.8)		27 (48.2)	29 (51.8)	56 (13.7)	
Endocrine	34 (29.3)	82 (70.7)	116 (23.2)		68 (68.0)	32 (32.0)	100 (24.5)	
Respiratory	19 (21.3)	70 (78.7)	89 (17.8)		49 (59.8)	33 (40.2)	82 (20.1)	
Cardiology	19 (17.9)	87 (82.1)	106 (21.2)		46 (53.5)	40 (46.5)	86 (21.1)	
Neurology	13 (13.5)	83 (86.5)	96 (19.2)		52 (61.9)	32 (38.1)	84 (20.6)	
Total	**100 (20.0)**	**401 (80.0)**	**501 (100)**		**242 (59.3)**	**166 (40.7)**	**408 (100)**	

the preference group.[12] In a controlled study in diabetes patients using a patient empowerment education program, it was shown that the intervention group had a significant reduction in glycated hemoglobin level.[13]

It is possible that any positive effects of health education have more to do with motivation and change in behavior and attitudes rather than with expansion of knowledge.[14] As expected, the level of education was found to be positively proportional to a patient's awareness of their diagnoses, complications, and medications. This might have also influenced the effect of age, since the most educated patients in our community are people in the age group of 20-50. With chronicity of the disease, the knowledge of diagnosis, and complications increased but not the medications, which could be explained by the frequent changes in medications of chronically ill patients and unfamiliarity of the patients with the name of the drugs. Unfortunately, we were unable to find any other studies addressing similar questions in the Saudi population for comparison. This study is limited by the difficulty to ascertain that all questionnaires were filled out by the patients themselves and not their companions. In addition, it may be difficult to generalize this study to the entire population since it was performed in a tertiary care center and involved a limited number of clinics in the hospital.

In conclusion, we feel that this data is of great concern and is certainly alarming. We recommend that a large campaign should be arranged, where physicians are advised on the importance of proper patient education. In addition, the lack of proper education by physicians could be compensated for by an increase in non-physician based educational tools, including reading materials, television programs, small group sessions, and so forth. We need to know which patients need further education and to investigate the physicians' perspective regarding the actual causes of this low level of patients' awareness. We also recommend a national study in this major area to end with national records.

Table 4 - Factors associated with patients' satisfaction of details of their condition.

Factor	Patients' satisfaction			*P*-value
	Yes	No	Total	
	n (%)			
Age:				0.153
≤20 years	21 (75.0)	7 (25.0)	28 (5.6)	
21-30 years	64 (71.9)	25 (28.1)	89 (17.8)	
31-40 years	66 (74.2)	23 (25.8)	89 (17.8)	
41-50 years	64 (59.8)	43 (40.2)	107 (21.3)	
51-60 years	66 (72.5)	25 (27.5)	91 (18.2)	
>60 years	73 (75.3)	24 (24.7)	97 (19.3)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	
Gender:				0.96
Male	158 (70.5)	66 (29.5)	224 (44.7)	
Female	196 (70.8)	81 (29.2)	277 (55.3)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	
Education:				0.36
Illiterate	73 (76.8)	22 (23.2)	95 (19.0)	
Primary	59 (68.6)	27 (31.4)	86 (17.2)	
Intermediate	37 (62.7)	22 (37.3)	59 (11.8)	
High school	80 (68.4)	37 (31.6)	117 (23.3)	
Higher education	105 (72.9)	39 (27.1)	144 (28.7)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	
Know of diagnosis:				0.001
Yes	244 (76.0)	77 (24.0)	321 (64.0)	
No	110 (61.1)	70 (38.9)	180 (36.0)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	
Duration of illness:				0.198
<1 year	24 (68.6)	11 (31.4)	35 (7.4)	
1-5 years	162 (67.8)	77 (32.2)	239 (50.7)	
5-10 years	71 (74.7)	24 (25.3)	95 (20.2)	
>10 years	80 (78.4)	22 (21.6)	102 (21.7)	
Total	**354 (70.7)**	**147 (29.3)**	471 (100)	
Know of complication:				0.014
Yes	81 (81.0)	19 (19.0)	100 (20.0)	
No	273 (68.1)	128 (31.9)	401 (80.0)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	
Know of medication:				0.78
Yes	178 (73.6)	64 (26.4)	242 (59.3)	
No	125 (75.3)	41 (24.7)	166 (40.7)	
Total	**354 (70.7)**	**147 (29.3)**	**501 (100)**	

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