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MAIN ARTICLE

Use of real patients in teaching ENT diseases to undergraduate students and its effects on patient satisfaction: cross-sectional survey

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Abstract

Objectives: To describe a method of using real patients in teaching ENT to undergraduates and to examine whether being a case patient affected patient satisfaction.

Methods: In a cross-sectional study, 68 teaching-involved patients (case patients) with a suspected common ENT illness and 68 matched (in terms of age, sex and region of complaint) control patients evaluated the health service and their encounter with the physician. The students saw the case patients first independently and then saw the patient with the teacher physician. The controls were treated in a normal way.

Results: Fifty-eight case patients (84 per cent) and 65 control patients (95 per cent) answered the questionnaire. The median duration of the visit was significantly longer for the case patients than the controls (115 *vs* 60 minutes). Almost all patients in both groups graded the overall quality of the health service, and the variables describing various aspects of the setting and the encounter with the physician, as either good or excellent.

Conclusion: Patients who took part in the undergraduate teaching of ENT diseases were equally content with their primary visit as the control patients, even though their visit took a markedly longer time.

Key words: Otorhinolaryngologic Diseases; Outcome Assessment (Health Care); Patient Satisfaction; Physical Examination; Medical Education, Undergraduate

Introduction

The importance of adequate undergraduate training in ENT has recently been emphasised.[1,2] The main goal in teaching ENT to undergraduates is to produce future general practitioners capable of recording relevant medical history and above all examining the upper aerodigestive tract properly. This ability to determine ENT status thoroughly is the key to diagnosing and managing patients with ENT problems successfully. It is particularly important to be able to find and refer patients with potential malignancy or life-threatening infections early to specialist care. The traditional way of teaching ENT to medical students involves lectures and demonstrations in in-patient and out-patient clinics and the operation theatre. Typically, practical sessions comprise training where the students examine each other.

Recently, greater consideration has been given to patient-centred learning, where patients have a more active role in medical education.[3] Using real patients in teaching has advantages: patients are readily available, they have abnormal findings, they often require fewer additional resources and lower costs, and they add to the validity of an assessment or teaching exercise. The most important disadvantage is the potential harm, distress or embarrassment for the patient. The encounter between the patient and physician is very important, and the teaching setup may disturb this interaction.

We have a long history of using actual patients in real case-based teaching of ENT to undergraduate students in Oulu University Hospital, Finland. We conducted a cross-sectional study to describe our method of using real patients in teaching ENT to undergraduates and to examine whether being a case patient affected patient satisfaction.

Materials and methods

Ethical considerations

All the patients provided written informed consent. As this was a questionnaire study, in which a standard quality control questionnaire form was used, no formal ethical approval was required.

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Design and setting

This cross-sectional survey was conducted at a tertiary care ENT centre in Oulu, Finland (Oulu University Hospital), between January and March 2010.

Participants

We selected participants from patients referred to the ENT out-patient department. Two sets of patients were required: a case group and a control group. The case group consisted of patients who participated in teaching. Each case patient was matched, in terms of age (±5 years), sex and region of ENT complaint, with a control patient, the latter of whom formed the control group.

The entry criteria for all patients were: age over five years, ability to understand and answer questions about the medical visit, and suspicion (according to the referral letter) of a common ENT illness (e.g. chronic tonsillitis, chronic rhinosinusitis, snoring or perforation of the tympanic membrane). Overall, 68 case patients and 68 control patients were offered the chance to participate.

Clinical history and examination

Case patients. Prior to encountering patients who would participate in teaching, the students had to pass a preliminary ENT course. This included lectures on the relevant anatomy and physiology, and examination technique. The students also practised performing a clinical examination with a co-student, under the supervision of a teacher, in two 90-minute sessions. The students examined each other's ears, skin of the scalp and face, oral cavity and nose, and also palpated each other's neck. A headlamp was used to leave the hands free. This meant that the oral mucosa could be better visualised with a tongue depressor, and the oral mucosa and tongue could be palpated. The students also examined each other's nasopharynx and larynx using a mirror. After this theoretical and practical training, and upon passing a written primary exam, the students started examining real patients.

For the case patients, the teaching session served as the first visit to the ENT out-patient clinic in Oulu University Hospital (real case-based teaching). The patients received information about the teaching session from the clinical teacher before the session. After the patients had provided informed consent, two to three students greeted the patient before recording the patient's medical history and performing a thorough ENT examination independently. The patient's history and clinical findings were presented to the clinical teacher, who checked and completed the medical history and clinical examination. The teacher physician then chose the necessary further examinations and planned the treatment together with the students and the patient. Small procedures (e.g. nasoendoscopy and skin biopsy) were performed by the student, if possible, at this same visit. The students dictated the actual medical history, which was checked by the supervising teacher. No other physician saw these patients.

Control patients. The residents in specialist training interviewed and examined the control patients independently in a normal way, and consulted a senior physician only if necessary.

Outcome measures

After the visit, both the case patients and the control patients answered a self-administered questionnaire about the visit. We used a questionnaire called 'Quality of medical care in an outpatient clinic: Patient's view', which was produced by the Finnish National Institute of Health and Welfare and is commonly used to measure patient satisfaction in Finnish healthcare. It is a modified Finnish translation of a questionnaire originally titled 'Outpatient services: The patient's viewpoint', produced by the Hospital Corporation of America.[4]

Background information collected included age, sex, use of healthcare services during the prior year and level of education. The patients graded a range of variables related to the setting of the visit, such as the quality of the instructions sent before the visit, the length of waiting time at the hospital and the adequacy of the time reserved for the visit, on a five-point Likert-type scale ranging from very poor to excellent. The patients similarly graded variables related to their encounter with the physician, such as the behaviour of the physician, the professional skill of the physician, the interaction with the physician and the overall quality of the health service provided. The arrival and departure times were recorded. In addition, we asked the case patients whether they would recommend participation in teaching sessions to other patients.

Statistical methods

Descriptive data are given as means with standard deviations, or as medians with ranges, as appropriate. We used the Mann–Whitney U test to compare continuous variables and the chi-square test to compare categorical variables.

Results

Of the 68 case patients and 68 control patients, 58 (84 per cent) and 65 (95 per cent), respectively, answered the questionnaire, forming a combined study population of 123 patients. There were no significant differences in the age, sex, level of education and number of prior medical visits between the case and control patients (Table I).

The median duration of the visit was significantly longer for the case patients than the control patients (115 minutes *vs* 60 minutes; $p < 0.001$) (Table II). Otherwise, the rated quality of prior instructions and waiting time at the hospital were both comparable between the two groups.

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TABLE I
PATIENTS' CHARACTERISTICS

Characteristic	Case (teaching-involved) group*	Control group†	p‡
Age (mean (SD); years)	44 (19)	48 (23)	0.23
Female	22 (47)	33 (53)	0.51
Level of education			0.34
– Comprehensive school	12 (25)	12 (23)	
– Secondary or vocational school	20 (43)	15 (29)	
– Polytechnic	10 (21)	19 (36)	
– University	5 (11)	6 (11)	
Use of health services during prior year			0.10
– 0–3 times	33 (69)	41 (67)	
– 4–6 times	5 (10)	14 (23)	
– 6+ times	10 (21)	6 (10)	
Region of complaint			0.27
– Ear	8 (14)	17 (26)	
– Throat, neck or skin	8 (14)	10 (15)	
– Nose	36 (62)	33 (51)	

Data represent numbers (and percentages) of patients unless otherwise indicated (percentages do not add up to 100 because of missing data). *$n = 58$; †$n = 65$. ‡Differences analysed using the chi-square test or Mann–Whitney U test. SD = standard deviation

Almost all the case and control patients classified the physicians' behaviour, the physicians' professional skill and the interaction with the physician as good or excellent (Table III). Similarly, nearly all the patients in both groups evaluated the overall health service they had received as either good or excellent.

Fifty-five (95 per cent) of the case patients would recommend participation in teaching in the university hospital to other patients.

TABLE II
PATIENTS' OPINIONS RELATING TO SETTING OF MEDICAL CARE

Variable	Case (teaching-involved) group*	Control group†	p‡
Duration of visit (median (range); mins)	115 (70–235)	60 (15–265)	<0.001
Quality of instructions sent before visit			
– Average at best	9 (16)	9 (14)	0.17
– Good	36 (63)	31 (49)	
– Excellent	12 (21)	23 (36)	
Length of waiting time at hospital			0.47
– Average at best	12 (22)	7 (11)	
– Good	23 (42)	32 (51)	
– Excellent	20 (36)	24 (38)	
Adequacy of time reserved for visit			0.60
– Average	2 (4)	1 (2)	
– Good	23 (46)	28 (44)	
– Excellent	25 (50)	34 (54)	

Data represent numbers (and percentages) of patients unless otherwise indicated (percentages do not add up to 100 because of missing data). *$n = 58$; †$n = 65$. ‡Differences analysed using the Mann–Whitney U test

TABLE III
PATIENTS' OPINIONS RELATING TO QUALITY OF MEDICAL CARE

Variable	Case (teaching-involved) group*	Control group†	p‡
Overall evaluation of health service			0.98
– Average	1 (2)	2 (3)	
– Good	16 (32)	19 (30)	
– Excellent	33 (66)	42 (67)	
Physician's behaviour (e.g. appreciation, kindness, politeness)			0.19
– Average	0 (0)	3 (5)	
– Good	17 (31)	9 (14)	
– Excellent	38 (69)	51 (81)	
Physician's professional skills			0.60
– Good	20 (36)	20 (32)	
– Excellent	35 (64)	43 (68)	
Interaction with physician			0.94
– Average	0 (0)	2 (3)	
– Good	21 (40)	23 (35)	
– Excellent	32 (60)	39 (61)	

Data represent numbers (and percentages) of patients (percentages do not add up to 100 because of missing data). *$n = 58$; †$n = 65$. ‡Differences analysed using the Mann–Whitney U test

Discussion

Synopsis of key findings

In this cross-sectional survey study, we described one method of using real patients in teaching ENT diseases to undergraduates, and explored the effect this had on patient satisfaction (for our referral out-patient clinic patients). We found that the case patients were equally content with their primary visit as the matched (in terms of age, sex and region of complaint) control patients, even though their visit lasted a markedly longer time. Almost all the patients in both groups graded the variables describing various aspects of the setting and the encounter with the physician as either good or excellent.

Comparison with other studies

Patients who participate and interact in medical education have been reported to be generally satisfied, which is in agreement with our findings.[5,6] Case patients have described a number of perceived benefits, including being able to increase their own knowledge, share their knowledge and expertise with the learner, and gain satisfaction and enjoyment from the encounter.[3] According to Hajioff and Birchall, clinic appointments are not necessarily longer in the presence of students,[5] but in the current study the students were active doctors, not passive observers, which resulted in a markedly longer appointment time. This did not affect patient satisfaction though.

Study strengths and limitations

The response rate to the questionnaire was considerably high in both groups, and the fact that the control

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patients were matched with case patients makes significant selection bias unlikely. One clear limitation of this study is the relatively small sample size. Furthermore, the comparison group was examined primarily by residents, not specialists. Still, the overwhelming majority of all the patients graded the various aspects of the medical visit as either good or excellent. Thus, we think a study that comprises a larger sample, in which control patients are examined by specialists, would not provide essentially different conclusions.

- **Recently, the value of patient-centred learning, in which patients have a more active role in medical education, has been emphasised**
- **The use of real patients in teaching has many advantages, but may affect patient–physician interaction**
- **This paper describes how real patients can be used in teaching ENT diseases to undergraduates**
- **The case patients were equally as satisfied with the healthcare services received as the control patients**

Clinical applicability

We have shown that, with proper arrangements, real patients may be used in teaching ENT to undergraduates, without sacrificing patient satisfaction. The prerequisites for successful teaching are the adequate provision of prior information to patients, a positive attitude of the staff towards teaching and proper organisation.

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