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Healthy subjects' knowledge of surgical complications: a hospital-based survey

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Background/aim: There is an ongoing debate about how much a patient should know about serious or frequently occurring risks of their surgery. In this study, we evaluated healthy subjects' perspectives on knowledge of serious surgical complications.

Materials and methods: Three hundred and thirty healthy subjects (151 women, 179 men; mean age: 43.6 ± 17.3 years) were surveyed with the study questionnaire. Social profile, surgical history of the healthy subjects, and presence of a relative while giving preoperative consent were assessed.

Results: Only 23.5% (39/166) of the subjects were informed about all the potential complications of their previous surgical operation and 44.9% (73/166) did not get any preoperative consent on surgical complications. A statistically significant percentage of subjects who did not get proper information about the serious complications involved in their surgery indicated a desire for preoperative informed consent (97.0%, 128/132, P = 0.0001).

Conclusion: The results indicated that a significant percentage of the subjects wanted to be informed of the potential complications of a surgery in the presence of a relative (73.9%, 192/260, P = 0.009). Involving a relative in preoperative consent may have a positive effect on the patient and can increase the level of postoperative recall of the risks.

Key words: Informed consent, health survey, intraoperative complications

1. Introduction

Although the decision to perform a surgery should be a compromise between the patient and the doctor, in general it mostly depends on the doctor's judgment in a medical emergency or after a medical examination. Elective or urgent, each surgery has a risk of complication, including organ perforation, pulmonary embolism, arrhythmia, low blood pressure, stroke, anesthesia-related death, and postoperative infections, pain, and fever. It is the patient's right to get adequate information about the risks and benefits of a surgical procedure (1,2). The surgeon must preoperatively warn the patient of the potential risks of the procedure and treatment and must be sure that the patient is competent enough to understand and accept common or serious side effects and serious or frequently occurring risks, even the ones that can have adverse grave consequences (1–5). Preoperative patient information should include diagnosis, treatment, risks, and further course of the illness to enable the patient to make his or her own decision on having the surgery (1,2). Since most patients do not know about medical procedures, it is the attending doctor's legal and ethical responsibility to give the information using proper terms (6,7). The informed consent that must be signed by the patient before an operation as a legal requirement is, therefore, an important factor for medical care to be effective (8,9).

There is an ongoing debate about how much a patient should know about operative risks. Too much information about potential surgical complications can lead a minority of patients to have doubts and even decline the operation; alternatively, too little information fails to adequately inform patients before they sign the informed consent form (4,7,10,11). In some cases, the surgeon may prefer not to mention serious or frequently occurring risks that may cause a reasonable patient to decline the surgery (4). The general practice is to inform patients about the risks that can occur with greater than 1% frequency; sometimes, less frequent risks that can cause serious health problems are not mentioned at all (7).

To our best knowledge, there are no surveillance studies on healthy subjects' knowledge of surgical complications that can cause serious health problems or even death.

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Therefore, this study aimed to evaluate healthy subjects' perspective on the means and the amount of information provided on the potential surgical complications involved in an operation during the preoperative consent process.

2. Materials and methods

2.1. Study design and population

This cross-sectional surveillance study was conducted at the Department of Surgery of the Atatürk Training and Research Hospital with data gathered from 330 healthy subjects (151 women, 179 men; mean age: 43.6 ± 17.3 years, range: 18–65 years) from January to December 2006. The questionnaire was anonymous, participation was voluntary, and no medical data were collected. Therefore, no approval was necessary from the local ethics committee.

2.2. Study questionnaire

All the subjects were asked to fill out the study questionnaire shown in Table 1. The study questionnaire included information on the social profile of the healthy subjects, surgical history, and the details of the informed consent procedure prior to the operation of the subject and/or any relative of the subject's. The subjects' general perception of how much information about the potential risks involved in a surgical operation should be given, whether they wanted a relative to be included, how much time a doctor should spend with the patient during the preoperative consent procedure, and the parameters affecting these variables were also assessed.

2.3. Statistical analysis

Statistical analysis was carried out using SPSS 13.0 (SPSS Inc., Chicago, IL, USA). Subjects' answers to the study questionnaire were summarized with descriptive statistics (number and percentage). Univariate analysis (chi-square test) was performed to determine the variables (sex, education level, occupation, marital status, number of children, surgical history and complications of relatives, the subject's surgical history, and if they were properly informed of the potential risks of the surgery they had previously undergone) affecting the subject's desire to be informed about the potential risks involved in a surgical operation. $P < 0.05$ was accepted as statistically significant.

3. Results

Data obtained from 330 healthy subjects were analyzed to determine the factors affecting their desire to obtain preoperative information about the potential risks involved in a surgical operation. As shown in Table 2, a majority of the subjects (n = 322, 97.6%) preferred to be properly informed of all the potential risks of the surgery, including the most serious/deadly complications. We found that sex, marital status, number of children, education, and occupation had no effect on their desire to get detailed information on all potential complications of a surgery ($P > 0.05$ for all, Table 2).

Most of the study group (n = 279, 84.5%) had at least one relative that had undergone a surgical operation before (Table 3); 48.7% (136/279) of the healthy subjects indicated that their relatives had been preoperatively informed of the potential complications, while 26.2% (73/279) responded "not known". The occurrence of surgical complications was 24.8% (69/278; Table 3). As shown in Table 3, the presence of a relative who had previously been operated on did not affect the subject's desire to get detailed information on all potential complications of a surgery ($P > 0.05$ for all).

Around half of the study group (50.6%, 166/328) had undergone a surgical operation (Table 3). Of the subjects, 70.2% (118/168) gave written and/or oral consent for the surgery, and 78.3% (130/166) were properly informed on the diagnosis and the reasons for surgical decision. Neither variable affected a subject's desire to get detailed information on all potential complications of a surgery ($P > 0.05$ for both, Table 3). Interestingly, only 23.5% (39/166) of the subjects were preoperatively informed about all the potential complications of their operation. Among the subjects who had been partially, or not at all, informed of the potential complications of their previous surgical operation, the rate of subjects who would have wanted to receive detailed information on the potential complications of their surgery was higher than the rate of those who would not have wanted to be informed (97.0% versus 57.2%, $P = 0.0001$, Table 3). When asked if they wanted this information given to them alone, only to a relative, or both, a statistically significant majority of the subjects indicated that the preoperative information on the potential complications of a surgery should be given to the patient in the presence of a relative (73.9%, 192/260, $P = 0.009$, Table 3). The majority of subjects (67.4%, 176/261) mentioned that the doctor should spend over 10 min with the patient during the preoperative consent procedure, but there was no statistically significant preference for duration of the informed consent procedure ($P > 0.05$, Table 3).

4. Discussion

The decision about surgery should be based on effective communication between the doctor and the patient. According to the law, the patient must be informed about the diagnosis and its uncertainties, the purpose, benefits and risks of the recommended treatment, other treatment choices and their benefits and risks, and potential complications (1,2,4–7,11–14). With sufficient information, the patient can decide whether or not to go ahead with the surgery, knowing the risks of refusing or accepting the treatment (1,5,13). "Sufficient information" is a critical term here; it is the doctor's responsibility to

Table 1. Study questionnaire.

Question	Answer
1. Education	☐ Primary school ☐Secondary school ☐University
2. Occupation	☐Unemployed ☐Self-employed ☐Employed ☐Retired
3. Age and sex	..... ☐Man ☐Woman
4. Marital status	☐Single ☐Married ☐Widow ☐Divorced
5. Number and ages of children	.....
6. Have any of your relatives had an operation before?	☐Yes ☐No
6a. If yes, was your relative preoperatively informed about potential complications?	☐Yes ☐No ☐Don't know
6b. Did your relative suffer from any surgical complications?	☐Yes ☐No
6c. Describe the consequences of the surgical complications.	.....
7. Have you had any surgery before?	☐Yes ☐No
8. Type of previous surgery.	.....
9. Did you give written and/or oral consent for the operation?	☐Yes ☐No
10. Were you properly informed of the diagnosis and of your doctor's reasons for the operation?	☐Yes ☐No
11. Did your doctor properly inform you of potential complications of the operation and anesthesia?	☐Yes ☐Partially ☐No
12. If your answer is "no" or "partially", would you have liked to have been properly informed?	☐Yes ☐No
13. Would you like a relative to be involved in receiving the information about preoperative consent for potential surgical complications?	☐To myself ☐To a relative ☐Both
14. How much time should a doctor spend with the patient during preoperative informed consent procedures?	☐A few minutes ☐10–15 minutes ☐20–30 minutes ☐Other:……..
15. Would you like to be properly informed on all potential risks of the surgery, including the most serious/deadly complications?	☐Yes ☐No
16. Would you like to be properly informed of all potential risks of the surgery, including the most serious/deadly complications?	If yes, please explain ……. If no, please explain …….

Table 2. Relationship between characteristics of the healthy subjects and their desire to be preoperatively informed of surgical complications.

Subject's characteristics		n	%	Does the subject want to be preoperatively informed of surgical complications?		P-value
				No n (%)	Yes n (%)	
Sex	Men	179	54.2	6 (3.4)	173 (96.6)	0.297
	Women	151	45.8	2 (1.3)	149 (98.7)	
Marital status	Single	97	29.4	3 (3.1)	94 (96.9)	0.903
	Married	218	66.1	5 (2.3)	213 (97.7)	
	Widow	13	3.9	0 (0)	13 (100)	
	Divorced	2	0.6	0 (0)	2 (100)	
Number of children	None	139	42.2	5 (3.6)	134 (96.4)	0.582
	1 to 3	175	53.0	3 (1.7)	173 (98.3)	
	4 to 7	16	4.8	0 (0)	15 (100)	
Education	Primary school	55	16.7	1 (1.8)	54 (98.2)	0.190
	Secondary school	146	44.2	6 (4.1)	140 (95.9)	
	University	129	39.1	1 (0.8)	128 (99.2)	
Occupation	Unemployed	53	16.1	2 (3.8)	51 (96.2)	0.064
	Self-employed	78	23.6	5 (6.4)	73 (93.6)	
	Employed	187	56.7	1 (0.6)	186 (59.4)	
	Retired	12	3.6	0 (0)	12 (100)	

find out how much a patient wants to and should know about the condition and its treatment options (1). The amount of information given to each patient differs depending on the patient's characteristics (beliefs, culture, education, and occupation), the patient's own wishes, the medical history of the patient, the condition requiring surgery, the complexity of the surgical treatment, and the complications associated with the treatment (1,4,7). It is hard to decide how many details should be given to a patient who is about to undergo a surgery, especially one with a high risk of failure or adverse side effects. Although there are a number of guidelines, the issue of how much to explain to a patient undergoing surgery is still unclear (4,7,11,12). There are some serious complications that are extremely rare and not routinely mentioned by some doctors, who know that a reasonable patient can have doubts and even decline the procedure after learning all the risks they are accepting by having the surgery (7). The General Medical Council advises doctors to only inform patients undergoing surgery about "common or serious side effects" and "serious or frequently occurring risks" based on studies showing that the doctor's perspective and presentation of risks involved in a surgical treatment is not easily understood by the patient (2). It is important to note that although patients want detailed preoperative information on surgical procedures, including risks and benefits, in most cases there is an insufficient postoperative recall of the details (3,9,15). A study of 142 patients who had undergone orthopedic surgery indicated that about 50% of the patients did not recall the risks postoperatively (11). A more recent study, on the other hand, reported that 59% of 188 patients who had undergone carpal tunnel syndrome surgery successfully recalled the risks of the operation 1 month after their discharge from the hospital (14).

In this study we surveyed 330 healthy subjects (151 women and 179 men). The survey included questions about the social profile and surgical history of the study group and the subject's perspective on having detailed information on all the potential complications, including the extremely rare but very serious ones. Earlier studies pointed out that most patients want to know about

Table 3. Relationship between responses to survey questions and desire to be preoperatively informed about surgical complications.

Survey question		n[a]	%	Does the subject want to be preoperatively informed of surgical complications?		
				No n (%)	Yes n (%)	P-value
6. Have any of your relatives had an operation before?	Yes	279	84.5	7 (2.5)	272 (97.5)	0.815
	No	51	15.5	1 (2.0)	50 (98.0)	
6a. If yes, was your relative preoperatively informed of potential complications?	Yes	136	48.7	2 (1.5)	134 (98.5)	0.168
	No	70	25.1	1 (1.4)	69 (98.6)	
	Don't know	73	26.2	4 (5.5)	69 (94.5)	
6b. Did your relative suffer from any surgical complications?	Yes	69	24.8	2 (2.9)	67 (97.1)	0.685
	No	209	75.2	5 (2.4)	204 (97.6)	
7. Have you had any surgery before?	Yes	166	50.6	5 (3.0)	161 (97.0)	0.723
	No	162	49.4	3 (1.9)	159 (98.1)	
9. Did you give written and/or oral consent for the operation?	Yes	118	70.2	3 (2.5)	115 (97.5)	0.635
	No	50	29.8	2 (4)	48 (96)	
10. Were you properly informed of the diagnosis and of your doctor's reasons for the operation?	Yes	130	78.3	5 (3.8)	125 (96.2)	0.477
	No	36	21.7	0 (0)	36 (100)	
11. Did your doctor properly inform you of potential complications of the operation and anesthesia?	Yes	39	23.5	0 (0)	39 (100)	0.225
	Partially	54	32.5	1 (1.9)	53 (98.1)	
	No	73	44.9	4 (5.5)	69 (94.5)	
12. If your answer is "no" or "partially", would you have liked to have been properly informed?	Yes	132	95.0	4 (3.0)	128 (97.0)	0.0001
	No	7	5.0	3 (42.8)	4 (57.2)	
13. Would you like a relative to be involved in receiving the information about preoperative consent for potential surgical complications?	To myself	55	21.1	3 (5.5)	52 (94.5)	0.009
	To a relative	13	5.0	2 (15.4)	11 (84.6)	
	Both	192	73.9	2 (1.1)	190 (98.9)	
14. How much time should a doctor spend with the patient during preoperative informed consent procedures?	A few minutes	37	14.2	2 (5.4)	35 (94.6)	0.491
	10–15 minutes	100	38.3	3 (3.0)	97 (97.0)	
	20–30 minutes	76	29.1	2 (2.6)	74 (97.4)	
	Other	48	18.4	0 (0)	48 (100)	

[a]Total number of subjects are less than 330 for some variables, since some questions were not answered by all of the subjects.

complications, even those with a one-in-a-million risk (16). Studies on how much information should be provided before a cataract surgery indicated that patients wanted to be informed about all potential risks of the surgery and that pertinent information had no effect on the patient's decision on having the treatment (4). Burkle et al. recently evaluated 411 surveys from clinic patients and reported that more than 80% of the patients wanted the most severe complications to be discussed, even if they were extremely rare (17). As expected from previous studies, almost all of the subjects in the present study (n = 322, 97.6%) indicated their desire to have detailed information on the surgical operation, including risks and benefits and details of the procedure (Table 2).

In this study, no significant relationship was observed between the healthy subject's desire to be informed and sex, marital status, number of children, education, or occupation (Table 2). The level of recall of surgical complications was unrelated to sex; however, better-educated patients were better at recalling the potential risks of an operation (11,15,18).

Among the healthy subjects, 23.5% (39/166) had not received any preoperative information on surgical complications for their previous surgery and 32.5% (54/166) obtained only partial information (Table 3). Similarly, there are some studies showing that less than 30% of the patients evaluated were informed of the potential complications of the proposed surgery (19). In countries where informed consent is accepted just as a legal document to be signed before surgery, this percentage can go as low as 4% (5). Cawich et al. recently reported that even in countries where the patient's rights to contribute to the decision on surgery are protected by law, 9% of 236 surgical patients signed the informed consent without any preoperative discussion on the benefits and risks of having the surgery (7). The same study concluded that a significant percentage of the patients wanted to be better informed on operative risks (34%) and to receive more detailed disclosure (52%) (7).

The majority of subjects who had been partially or not at all informed of potential complications of their operation wanted to be preoperatively informed of the risks that could cause serious health problems (97.0%, P = 0.0001, Table 3). The survey data also indicated a desire to have a relative be present during the consent procedure (73.9%, 192/160, P = 0.009, Table 3).

It is important to note that there were two main limitations of the study presented here: the results were obtained from the evaluation of limited data collected from a survey performed at a single institution with a small group of healthy subjects, and a number of the questions in the survey were not answered by all the subjects. Although these limitations may seem to affect the outcome of the survey, to our best knowledge this is the first dataset strongly suggesting that preoperative information on surgical complications should be provided in the presence of a relative.

In conclusion, it is the patient's right to be informed of the potential complications of the surgical operation that they are about to undergo. There are, on the other hand, only a limited number of studies analyzing the patient's perspective on the subject and, to our best knowledge, there are no data on healthy subjects' views on preoperative information on serious surgical complications. Here we evaluated healthy subjects' perspectives on the means and the amount of preoperative information on potential surgical complications. As expected, almost all of the healthy subjects wanted to know about all the risks involved in a surgical treatment, even extremely rare but very serious complications. The most interesting result obtained from the questionnaire was the healthy subjects' desire to discuss the preoperative information on surgical complications in the presence of a relative. Although further studies are required, we think that this approach may have an effect on the patient; they may feel less anxious before the surgery and be able to better postoperatively recall the information provided.

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