

Problems and Factors of Information Misperception in Orthopaedic Patients

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ABSTRACT

Medical information is important not only for decision-making but also for the expected outcome of the result of treatment. Two hundred and thirteen orthopaedic patients admitted to Prince of Songkla University during the period June 1, 2000 to October 1, 2000 were interviewed. They answered a questionnaire on the day of discharge to evaluate the problems and factors of information misperception regarding their illness. The results showed that 13.6% of patients did not know the diagnosis of their illness, while 53% of patients did not know the results of their investigations. One-third of the patients could not recall the risks and benefits of the treatment. Furthermore, 76% of patients could not remember the doctor's advice. The variables of age, sex, occupation, disease, ward, educational status, hospital stay, status of the doctor and experience of the doctor were evaluated for influence if any on the information perception score. Only educational level had an important effect on the information perception score (statistically significant). This study reveals the magnitude of information misperception. The patient's educational status is the only factor affecting good information perception (statistically significant).

INTRODUCTION

Medical information is important for the patient not only for decision-making, but also for the satisfaction of the patient with the result of treatment^{1,2}. For the decision-making process, the patients have to know about the diagnosis, the rationale of the treatment, the risks and benefits of the treatment, the surgeon's recommendation and alternative treatments^{3,4}. Under stressful condition during their illness, patients have been found to recognise only part of these useful information. Herz et al⁵ revealed that only 43.5% of neurosurgical patients recalled this information and only 38.4% could still remember them 6 weeks after discharge. Hutson et al³ reported that only 25% of total joint replacement patients could recall the risks of surgery

at 6 months after surgery. Information misperception had adverse effects on the doctor-patient relationship and the decision-making process and could result in conflict and legal action^{7,8}. Information misperception can be due to the doctor and/or the patient. Among the factors due to the doctor, knowledge, experience, attitude and communicative skills of the doctor may affect the patient's ability to perceive the information. For factors due to the patient, age, sex, educational level, occupation and hospital stay may be important. Herz et al⁵ found that the higher the educational level of the patient, the higher the capacity to learn medical information. However, most orthopaedic conditions and diseases are different from those experienced in neurosurgery. This study aims to evaluate the magnitude of information misperception problems that exist and also to identify the factors that may contribute to this problem.

PATIENTS AND METHODS

Patients who were admitted to the Orthopaedic Department of Prince of Songkla University during the period from June 2000 - October 2000 were included in this cross-sectional study. Data regarding age, sex, occupation, educational status, disease, ward, hospital stay, status and experience of doctor were recorded. The patients answered a questionnaire and were interviewed for information regarding 5 domains: diagnosis, results of investigations, risks and benefits of treatment, rationale of management, and the advice from the doctor (Table 1). For patients below 15 years of age, their parents were interviewed instead of their children.

There were nine questions in the questionnaire (Table 1). Each item of the question was rated (0 = good, 1 = fair, 2 = poor). The total score was 18. A score of 0 or 1 in any item within a domain was considered to indicate information misperception regarding that domain. A total score was also calculated as the sum of the rating of the 9 items. Patients with a score equal to or less than 15 were classified into the misperception group

Table 1. List of the questions

1. What is/are the diagnosis of your illness?
2. Describe the detail of your illness?
3. What is/are the result(s) of the investigation?
4. List the risks of the treatment?
5. List the benefits of the treatment?
6. What is the plan of management by the doctor?
7. What type of treatment(s) is/are needed?
8. When is your next appointment with the doctor?
9. How should you take care of yourself after discharge from hospital?

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Statistical Analysis

All descriptive data were summarised as mean values or as percentages. The relationships of the variables including sex, age group, ward, occupation, educational level, disease, hospital stay, status of doctor and experience of doctor with patient misperception were analysed by Chi-square. Multivariate analyses using logistic regression was used to identify variables independently associated with patient misperception.

RESULTS

Two hundred and thirteen patients were included in this study. There were 162 males and 51 females. The mean age was 35.7 years. The mean length of stay was 13.4 days (range 1-120 days). For occupation, 22.5% of patients were workers, 16.4% were farmers or rubber tappers and 15%

were civil servants. For educational level, 7.6% were illiterate, 14.8% had grade school education, 17.5% had junior/high school education and 17% had university or higher level of education. The indication for admission were trauma (28.6%), spine (18.7%), paediatric (9.3%) sports injury (9.8%) and hand (8.9%). The doctors involved with these patients included 11 orthopaedic staff and 5 senior residents (Table 2).

The mean information perception score was 14.8 (SD 2.5) (Fig 1). Thirteen percent of the patients did not know the diagnosis of their illness, while 53% could not recall the results of their investigation. One-third of patients failed to recognised the risks and benefits of the treatment, while 76% of patients could not explain the instructions of how to take care of themselves after discharge. However, only 6 percent of these patients could not recall the plan of treatment (Fig. 2).

Table 2. Relationship between variables affecting information perception and perception score. Using univariate analysis.

Variable		Percentage of patients with score > 15	P-value*
Sex			.149
	Male	37.6	
	Female	49.0	
Age			.231
	≤ 25 years	40.0	
	26-45 years	42.3	
	> 45 years	32.8	
Ward			.206
	Male	36.0	
	Female	38.6	
	Private	50.0	
Occupation			.685
	Government officer	46.9	
	Semi-government officer	20.0	
	Seller trader		54.5
	Farmer/gardener		33.3
	Labourer	39.6	
	Others	40.7	
Education level			.018
	Illiterate	20.0	
	Grade school		27.6
	Junior/high school	58.8	
	College or higher	50.0	
	Others	34.5	
Disease			.680
	Trauma	41.6	
	Spine	42.5	
	Pediatric	35.0	
	Sport Medicine		52.4
	Hand	21.0	
	Reconstruction		33.3
Hospital stay			.877
	< 10 days		40.8
	≥ 10 days		39.8
Experience			.300
	< 5 years	44.8	
	5-10 years		35.2
	> 10 years		44.6

* Using Chi-square analysis

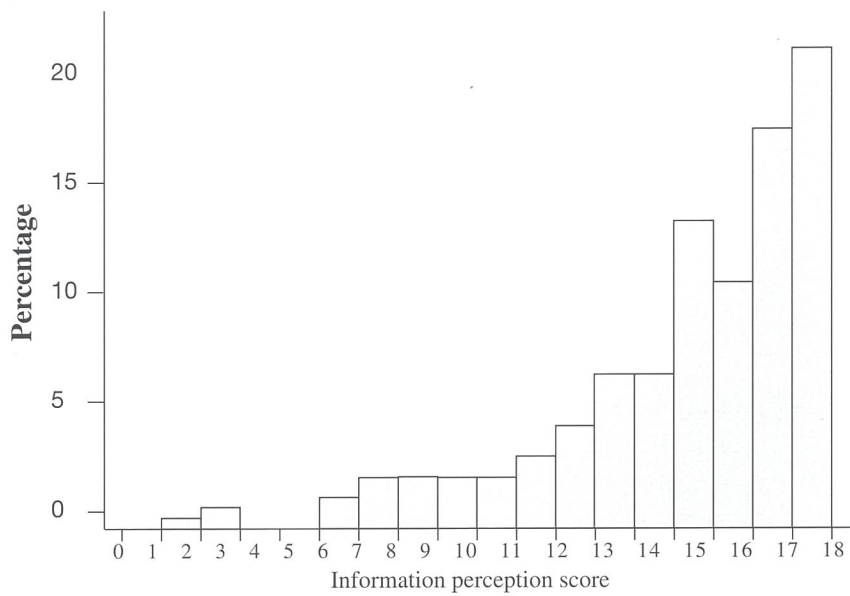


Fig. 1. Frequency of the patients' information perception score.

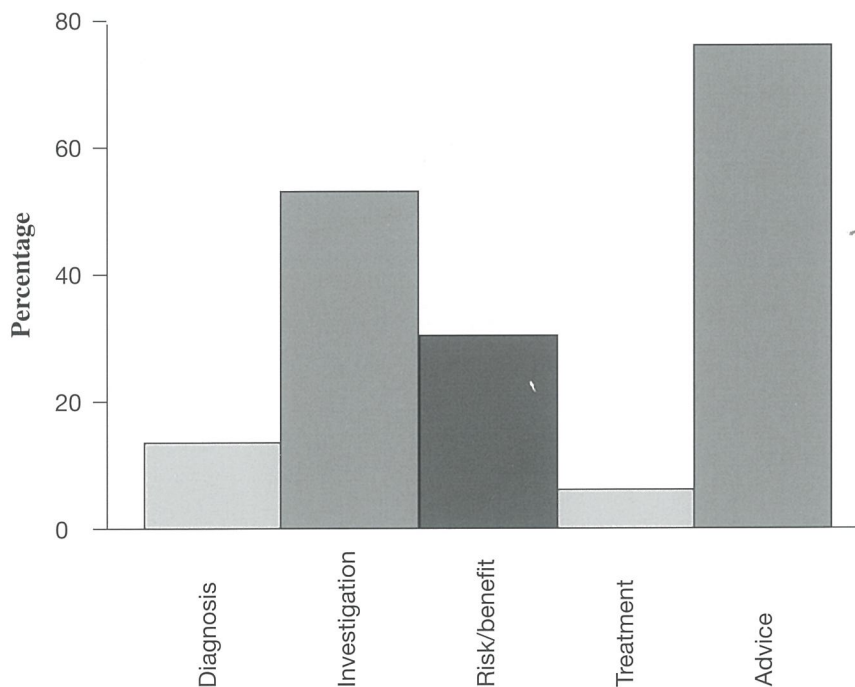


Fig. 2. Percentage of patients having information misperception.

From cross tabulations of misperception defined as perception score ≤ 15 , and the variables namely age group, sex, ward, education level, occupation, hospital stay, disease, status and experience of surgeons, only age group, sex, ward and education level were selected for inclusion in a multivariate model. Multivariate analysis revealed only patients educational level to be statistically significant in playing a role to affecting misperception.

Patients with college or higher level of education were less likely to misperceive information than patients who were illiterate (odds ratio 5.08, 95% CI : 1.16-22.31). However, this was not significantly different from patients with junior/senior high school qualification (odds ratio = 7.44, 95% CI: 1.67-33.02). Patients with grade school qualification had no difference in probability of perception compared to those in the illiterate group (odds ratio 22.15, 95% CI: 44-10.06) (Table 3).

Table 3. Multivariate model of information perception

Factor	Odds Ratio of patients with score > 15	95% CI	P-value*
Age			.333
≤ 25 years	1	-	
26-45 years	1.37	0.478-3.93	
> 45 years	0.67		
Sex			.151
Male	1	-	
Female	1.59	0.844-3.002	
Ward			.209
Male	1	-	
Female	1.12	0.543-2.296	
Private	1.78	0.931-3.380	
Educational level			.017
Illiterate	1	-	
Grade school	2.15	0.44-10.06	
Junior/high	7.44	1.68-33.03	
College or higher	5.09	1.16-22.32	
Others**	2.58	0.65-10.22	

* From likelihood ratio test

** Others mean the patients with informal education program

DISCUSSION

It is apparent that a large proportion of orthopaedic patients had information misperception problems. Thirteen percent of patients were unable to recall the diagnosis of their illness on the day of discharge in this study – a finding comparable to that of Hutson et al³. Most patients (76%) could not recall the the doctor's advice suggesting that they are at risk of having some complications from this communication failure. The results of investigations such as radiographs and laboratory investigations were other items that many patients could not remember. However, this information may not be as important to remember as the risks and benefits of the treatment, which could not be recalled by one-third of the patients, comparable to the results of Herz et al⁵. This might represent a failure to obtain informed consent. Patients may sign the consent form despite lacking a thorough understanding of the implication of the treatment that is being given.

The factor that was significantly associated with information perception was the patient's educational level, which is consistent with the finding of Cassileth¹³. In our study, patients with junior/senior high school and college or higher educational level had a higher probability of correctly perceiving the information. High educational level patients may pay more attention to the information, have higher communicative ability or may be given more information by the doctor¹³.

Strategies that may be useful to reduce information misperception include improving the doctor-patient relationship, spending more time for explanation, using a team approach, e.g., patient care team and continuous medical education (CME)¹⁴. Orthopaedic doctors must pay more attention to the problem of misperception because successful operation alone does not ensure satisfaction of the patient⁹. Furthermore, the orthopaedic doctor should have knowledge about medical ethics, especially on the

issue of informed consent¹⁰. Signing of the informed consent does not protect the doctor from being sued^{2,15}. Assessment of the capability of the patient to understand all information that is necessary for their illness is also important if their consent is to be truly informed^{11,12}.

This study investigated only the orthopaedic patients who were admitted to our hospital. Differences in information perception among race, geography and disease profile may limit the validity of extrapolation to different situations. Due to the cross-sectional study design, we could not access the temporal variation in perception score. The scoring system used in this study was modified from Morrow¹⁶. The system used is simple but its validity and reliability need to be further evaluated. The cut-off point was selected based on the mean value. However, changing the cut-off point to 12,13,14 or 16 did not change the results substantially.

In conclusion, we have shown that a large proportion of orthopaedic patients have information misperception. Educational status of the patient is the only factor identified that influenced information perception (statistically significant).

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