

Psychological impact of revealing a diagnosis of lung cancer to patients in China

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Background: In conventional Chinese culture, awareness of a malignant disease is believed to increase a patient's psychological pressure, leading to anxiety or depression. But this notion is in conflict with the patient's right to receive information about their own disease.

Methods: This study is to investigate whether disclosure of diagnosis increases the level of anxiety or depression in patients diagnosed with lung cancer. Seventy patients who underwent lung resection and diagnosed with lung cancer postoperatively were divided into two groups—the disclosed group (n=35) and the undisclosed group (n=35), depending on the awareness of their diagnosis, as decided by their consigned family members. All patients were asked to fill in a form to evaluate their level of anxiety and depression before discharge.

Results: Disclosure of diagnosis did not affect the degree of anxiety or depression in patients with lung cancer ($P>0.05$). Age ≤ 50 , relatively more advanced stage (stage II as compared with stage I) of disease, extensive surgery and major postoperative complication were risk factors of anxiety ($P<0.05$). Major postoperative complication was the only risk factor of depression ($P<0.05$).

Conclusions: Disclosure of diagnosis to patients with lung cancer does not induce or aggravate anxiety or depression in modern Chinese population. Factors such as complications, age, stage of disease and extent of surgery do have psychological impacts on patient with lung cancer.

Keywords: Lung cancer; disclosure; anxiety; depression

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Introduction

The right of informed consent refers to that of a patient to make sane decisions regarding the treatment strategy and measures for his disease based on his full understanding of the complete information disclosed to him by his care giver (1). Modern medical ethics deems the patient's right to know his or her diagnosis and the physician's reciprocal duty of disclosure as key elements of the informed consent process (2). It is widely accepted in the Western societies

that patients with malignant diseases should be fully informed of their diagnosis. While in the Oriental societies, such information is often concealed from the patients. Even in modern China, many healthcare providers and patients' families still believe in the conventional philosophy that concealing the diagnosis of cancer is beneficial to the patients, at least emotionally. But this is in conflict with the modern notion of the patient's right of being fully informed of their disease. Patients with lung cancer are more likely to develop various degrees of anxiety and depression

Table 1 Demographic and clinical characteristics of the patients (non-parameter Mann-Whitney)

Variables	Disclosed (n=35) (Mean ± SD)	Undisclosed (n=35) (Mean ± SD)	P
Age (years)	53.77±14.645	59.29±8.400	0.206
Length of stay (d)	19.49±10.106	16.77±5.440	0.311
Score for anxiety	6.17±3.176	7.09±4.054	0.501
Score for depression	4.51±3.248	6.03±3.996	0.121

Values given as mean ± SD.

due to physical discomfort and psychological factors the disease incurs (3). This prospective study was designed to investigate whether the awareness of diagnosis has a measurable impact on anxiety and depression in patients with surgically resectable lung cancer.

Methods

According to regulations in China, each patient and his/her family members were asked to sign a Letter of Proxy to assign one or more of the trusted members of his/her family to be informed of the conditions of the disease, to make decisions and sign documents on behalf of the patient. Such practice complied with the law and was in consideration of the tradition in China. We used the natural grouping method to divide the patients into two groups according to whether the diagnosis of cancer was disclosed or not. In this method, it was the consigned member of the family who decided which group the patient should be assigned to. Patients were grouped on admission. Patient's family was fully aware of the diagnosis in our study. The diagnosis of lung cancer was made either before or during surgery. Patients with stage III or IV diseases, older than 80 years, and those who underwent bilateral surgeries were excluded. From February 2013 to March 2013, a total of 70 patients who underwent pulmonary resection for lung cancer in our hospital were collected in the study.

Each patient was asked to fill in a Form of Hospital Anxiety and Depression Scale (HAD Form) before discharge. The HAD Form (4) is composed of 14 items, 7 each for the assessment of anxiety and depression. The results are scored from 0 to 42 which indicate the severity of anxiety or depression. The form can be divided into two equal parts for the evaluation of anxiety and depression. A score between 0 and 7 from each of the semi-form denotes

no symptom of anxiety or depression, a score between 8 and 21 denotes symptoms of anxiety or depression (4,5). The Chinese translation of the HAD Form we used in this study had been validated (6,7). The study was approved by the institutional review board at our hospital.

Data were analyzed using SPSS 16.0. Quantitative data were analyzed using Non-parameter Mann-Whitney and Wilcoxon test, while patho clinical data, status of anxiety and depression were analyzed using Pearson Chi-square test. Risk factors of anxiety and depression were analyzed using Binary Logistic Regression. $P < 0.05$ was regarded as being significant.

Results

Seventy patients were included in the study, and 50 of them were male. The average age of the patients was 56.5 ± 12.2 years (range, 17 to 76 years). The average length of hospital stay was 18.1 ± 8.2 days (range, 8 to 57 days). Twelve (17.1%) patients had major postoperative complications which included reoperation for bleeding, bronchoscopic aspiration for atelectasis, prolonged air leak and chylothorax. The average anxiety scores were 6.63 ± 3.64 (range, 0 to 18). Other demographic and patho clinical characteristics of the patients were summarized in *Tables 1, 2*.

No difference was observed in demographic data between the disclosed and undisclosed groups ($P > 0.05$) (*Table 1*). The anxiety and depression status and scores between the two groups were not significantly different either ($P > 0.05$) (*Table 2*).

Binary Logistic Regression revealed that age ≤ 50 , relatively more advanced stage, extent of surgery, postoperative complication were risk factors of anxiety ($P = 0.026, 0.047, 0.033, 0.002$), while only postoperative complication was a risk factor of depression ($P < 0.001$). Disclosure was not a risk factor of anxiety or depression ($P > 0.05$) (*Table 3*).

Discussion

Modern medicine assumes that every patient has the fundamental right to know the diagnosis, treatment and prognosis of his/her disease (1,2). This is not only an ethical principle, but also a legal right. In the Western world, disclosure of diagnosis to a patient with malignant disease has become normal practice of health care providers. This is by no means an inherent privilege of the patients. In the middle of the 19th century, the American Medical Association (AMA) admonished the doctors not to tell the patient diagnosis of gloomy prognostications, but recommended

Table 2 Demographic and patho clinical characteristics of the patients (Pearson Chi-square)

Variables	Disclosed (n=35) (%)	Undisclosed (n=35) (%)	P
Gender			0.597
Male (n=50, 71.4%)	24 (68.6)	26 (74.3)	
Female (n=20, 28.6%)	11 (31.4)	9 (25.7)	
Pathology type			0.570
Adenocarcinoma (n=35, 50.0%)	16 (45.7)	19 (54.3)	
Squamous cell carcinoma (n=20, 28.6%)	12 (34.3)	8 (22.9)	
Others (n=15, 21.4%)	7 (20.0)	8 (22.9)	
Stage			0.911
I (n=36, 51.4%)	18 (51.4)	18 (51.4)	
II (n=34, 48.6%)	17 (48.6)	13 (48.6)	
Type of surgery			0.212
VATS lobectomy (n=16, 22.9%)	5 (14.3)	11 (31.4)	
Open lobectomy (n=46, 65.7%)	25 (71.4)	21 (60.0)	
Open pneumonectomy (n=8, 11.4%)	5 (14.3)	3 (8.6)	
Extent of surgery			0.451
Lobectomy (n=62, 88.6%)	30 (85.7)	32 (91.4)	
Pneumonectomy (n=8, 11.4%)	5 (14.3)	3 (8.6)	
Complication			0.205
Yes (n=12, 17.1%)	8 (22.9)	4 (11.4)	
No (n=58, 82.9%)	27 (77.1)	31 (88.6)	
Anxiety			0.297
No (n=49, 70.0%)	27 (77.1)	22 (62.9)	
Yes (n=21, 30.0%)	8 (22.9)	13 (37.1)	
Depression			0.189
No (n=59, 84.3%)	32 (91.4)	27 (77.1)	
Yes (n=11, 15.7%)	3 (8.6)	8 (22.8)	

revealing it to the relatives. The AMA believed that the patient's spirit could be negatively affected by the health care provider's words, so that diagnosis of life-threatening diseases should be kept secret from the patient. People at that time believed that "benevolent lies" to conceal cancer diagnosis were meant to protect the patients from emotional upheavals and, therefore, morally justified. In 1953, Fitts and Ravdin performed a questionnaire investigation in the Philadelphia area of the US. on doctor's willingness to tell the truth to the patients. The results showed that 69% of the doctors usually

concealed the diagnosis of cancer from the patient. The two most common reasons for their behavior were unfavorable emotional reaction of the patient and the relative's request (8). As late as 1961, Oken conducted a study which showed that 90% of the doctors would lie to a patient with cancer, especially when that patient was in his last days (9). Although the doctors chose not to disclose the diagnosis of cancer, most patients would prefer to know (10). Within 20 years, the US. saw a complete reversal in the attitude toward truth-telling. In 1979, Novack and Oken used the

Table 3 Risk factors of anxiety and depression (Binary logistic regression)

Variables	Anxiety (%)		P	Depression (%)		P
	No (n=49) (70.0%)	Yes (n=21) (30.0%)		No (n=59) (84.3%)	Yes (n=11) (15.7%)	
Gender			0.564			0.177
Male (n=50)	36 (72.0)	14 (28.0)		44 (88.0)	6 (12.0)	
Female (n=20)	13 (65.0)	7 (35.0)		15 (75.0)	5 (25.0)	
Age			0.026			0.607
Age >50 (n=55)	42 (76.4)	13 (23.6)		47 (85.5)	8 (14.5)	
Age ≤50 (n=15)	7 (46.7)	8 (53.3)		12 (80.0)	3 (20.0)	
Pathology			0.434			0.743
Adenocarcinoma (n=35)	23 (65.7)	12 (34.3)		30 (85.7)	5 (14.3)	
Other types (n=35)	20 (57.1)	9 (25.7)		29 (82.9)	6 (17.1)	
Stage			0.047			0.276
I (n=36)	29 (80.6)	7 (19.4)		32 (88.9)	4 (11.1)	
II (n=34)	20 (58.8)	14 (41.2)		27 (79.4)	7 (20.6)	
Type of surgery			0.619			0.704
VATS (n=16)	12 (75.0)	4 (25.0)		13 (81.3)	3 (18.7)	
Open (n=54)	37 (68.5)	17 (31.5)		40 (74.1)	8 (14.8)	
Extent of surgery			0.033			0.443
Lobectomy (n= 62)	46 (74.2)	16 (25.8)		53 (85.5)	9 (14.5)	
Pneumonectomy (n= 8)	3 (37.5)	5 (62.5)		6 (75.0)	2 (25.0)	
Disclosure			0.192			0.101
Disclosed (n=35)	27 (77.1)	8 (22.9)		32 (91.4)	3 (8.6)	
Undisclosed (n=35)	22 (62.9)	13 (37.1)		27 (77.1)	8 (22.9)	
Complication			0.002			<0.001
Yes (n=12)	4 (33.3)	8 (66.7)		6 (50.0)	6 (50.0)	
No (n=58)	45 (77.6)	13 (22.4)		53 (91.4)	5 (8.6)	

same questionnaire they used in 1961 to investigate doctors' opinion about disclosure of cancer diagnosis and came up with a reverse result. Ninety-seven percent of the doctors were willing to disclose a diagnosis of cancer to the patient (11). Now, few doctors doubt the policy of truth-telling to cancer patients in the US.

In spite of the triumph of doctor's honesty and patient's autonomy over medical paternalism in North America, Northern and Western Europe, people in Asia and some part of Europe still hold the old belief that "benevolent lies" are better than cruel facts to patients with end-stage

diseases. Thomsen studied the variation in attitudes among European physicians toward truth telling in case of cancer. Unlike their colleagues in Northern Europe, physicians in Southern and Eastern Europe are more likely to reveal the diagnosis of cancer to the patient's spouse rather than the patient (12). This discrepancy in belief of truth telling reflects not only the difference of doctor's creed but also that of the population's expectation between the Western and Eastern World. It's deeply rooted in the Asian culture that benignly intended deception is meant for the patient's interest and therefore morally justified. Montazeri and

colleagues studied quality of life in patients with cancer in an Iranian population and found that those who did not know the diagnosis had a better physical, social and emotional quality of life than those who knew the diagnosis. They doubted the rationality of truth telling to cancer patient in the Asian World. They hypothesized that the principle of cancer disclosure might vary due to cultural differences (13). Similarly, studies conducted in India and Turkey showed that patients that received a cancer diagnosis had a significantly higher psychiatric morbidity than those left unaware of their diagnosis (14,15).

In fact, the East is not a monolithic block. In some parts of the Eastern World, the notion that disclosure of diagnosis is detrimental to patients with cancer is changing. This is partly the result of education in the medical school (16). In Qatar, Rodriguez used Oken's questionnaire to investigate a sample of 131 physicians, and found that nearly 90% of them claimed that they would inform patients of their cancer diagnosis (2). Another study from Turkey contradicted the excuse of cultural difference by not finding any difference in quality of life between patients who had their diagnosis of cancer revealed to themselves or not (17).

Our study did not find any relationship between disclosure of lung cancer diagnosis and patient's depression or anxiety. We believe that there were two factors contributing to our results which were discordant from some studies carried out in Asia. Firstly, health care providers are no longer the only source of information for patients. When a patient develops symptoms related to cancer, he/she will search online for possible diagnosis. Furthermore, when a patient has access to his/her report of imaging examination, the diagnosis is often self-evident. So, even if the doctors would withhold the truth, the patient could see through their "white lies". The patient and the doctor can sometimes reach a tacit agreement not to expose the lies. The patient feels that the doctor is concealing the diagnosis, but neither side would point it out. Secondly, as the medical conditions improve in China, more and more patients with lung cancer are diagnosed in early stage with a much better prognosis, patients are less likely to experience severe depression and anxiety and the doctors more willing to tell the truth.

Rises in the level of education and income are accompanied by aspirations for autonomy (18). In modern China, the patient's desire to know the truth is stronger than ever. On the other hand, the instillation of ideas of modern medical science in medical school and frequent international communications have been changing notions of young medical staff. Although the traditional Chinese

cultures prefer paternity in medical service, the new generation of doctors and nurses are more likely to consider truth telling a natural behavior.

The patient's ability to cope with the disease is reinforced by the knowledge of their diagnosis and prognosis. Being diagnosed with cancer has been found to be a motivation for lifestyle changes, which include dietary changes, physical activities and smoking cessation. Therefore, patients with cancer can benefit from disclosure of diagnosis. Kostopoulou and colleagues conducted a study which showed that cancer patients who knew their diagnosis were 2.5 times as likely to change their eating habits as those who didn't know their diagnosis, and newly diagnosed patients were more inclined to stop or reduce smoking (19). Furthermore, medical workers' honesty toward patients helps to establish mutual trust and better communication between both sides, which will promote patients' compliance to doctors' instructions (20). Lack of knowledge of their diseases could be a major obstacle for the patients to manage their health problems.

The limitations of this study should be noted. This was not a randomized controlled study. All the subjects included in this study were those who were willing to authorize their family member to decide whether truth should be told to themselves. These subjects were different from those who would insist on being told the truth in the first place. Secondly, level of education and economic status of the subjects were not clear. Patients with a more advanced level of education might be more capable of communication with their health providers and therefore more likely to insist on hearing the truth. Economic status was another concern. Patients of poorer economic status were more sensitive to the effectiveness of the treatment, and more likely to give up treatment when they felt that their disease was incurable. Finally, all the subjects in this study were diagnosed with stage I and II lung cancers. These patients might have a brighter view of the prognosis of their disease. Their emotional status might differ from those with end-stage diseases. All the above-mentioned factors would have a bearing on patient's willingness to participate in this study. Nevertheless, such biases in patient selection was unavoidable, as long as the principle of informed consent was complied with.

Conclusions

To conclude, the right to learn the truth of diagnosis and prognosis is a fundamental right of patients. It is not only wrong but also unnecessary to conceal cancer diagnosis to

patients who are willing to know the truth. Patients in the Orient, like their equivalent in the West, can competently cope with the bad news. Telling the truth will not increase the incidence of depression or anxiety. It maybe the time to gradually abandon the old belief of protecting patients with cancers by concealing truth from and making decisions for them in this old country. Change can be made beginning with patients with early-stage cancers.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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