RESEARCH COMMUNICATION

Analyses on the Rate and Epidemic Characteristics of Anxiety and Depression among Cancer Patients in Yangpu District in Shanghai

Anle Li

Abstract

Objective : To investigate the rate and epidemic characteristics of anxiety and depression of cancer patients in Yangpu district in Shanghai, China. Method: A self-rating anxiety scale (SAS) and a self-rating depression scale (SDS) were used to value the index of depression and anxiety of 560 cancer patients living in a community, randomly selected from the "Shanghai cancer patients database" in cluster sampling. A total of 511 questionnaires were returned and valid. Results:The depression rate according to self- rating depression scale in cancer patients was 53.0%; and the anxiety rate according to self- rating anxiety scale in cancer patients was 32.7%. The rate for anxiety and depression was 30.1%; and the ratio of depression accompany with anxiety was 58.78% ; the ratio of depression accompany with sub-anxiety was 4.35%. Conclusion: Psychological intervention is necessary for cancer patients, with comprehensive measures to improve life qualities and healing effects.

Key words: Cancer patients - qnxiety - depression - Shanghai

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Introduction

Anxiety or depression are related psychological diseases, which may arise because of diseases and family accidents and so on. Depression, a special kind of mental state, can vary from mild feelings of anxiety, depression and sadness to serious pessimism and despair. The existence of depression lowers patients' life quality, affects the outcome of cancer treatment, and increases treatment costs. Therefore, it is essential to correctly identify and treat cancer patients with depression (Hamiton, 1967; Pascoe et al., 2000; Sagsoz et al., 2001; Wojnar et al., 2003). Cancer is one of the most serious chronic diseases, and patients informed of their disease condition can easily develop some psychological stress responses (Spiegel and Giese-Davis, 2003; Ozono et al., 2005). To investigate the rate and epidemic characteristics of anxiety and depression of cancer patients, a random sampling was conducted among cancer patients in 2008, and the results are as follows.

Material & Methods

Sources of patients

There are 11 communities in Yangpu district in Shanghai. Cluster sampling was used for 2 communities and 560 cancer patients with permanent residence registered in the above two communities and alive with cancer without a psychopathic history were selected with simple random sampling.

As the part of cancer register and follow-up system of Shanghai, cancer register and follow-up system of Yangpu district built in 1972, and covered the whole population, with the same "Shanghai Cancer Patient Database". So all 560 patients who should be investigated were selected from the database, there were 511 persons who agreed to sign the consent form, and completed the questionnaire.

Measures and Contents

A general questionnaire seeking demographic and disease information associated with cancer (include cancer site, the time of diagnosis, treatment and quality of life and the level of recognition, etc). Self- rating anxiety scale (SAS) and self-rating depression scale (SDS) were used to measure the index of depression and anxiety. SAS and SDS were self-rating scale to access the recent depression status and anxiety status, not affected by the level of education, intelligence, age, gender or economy condition. There are a great deal of studies in clinical and epidemiological screening using the self-rating depression scale (SDS) in the world. The SDS is accepted as a simple depression screening tool and able to assess the degree of depression, the same as SAS to anxiety. It is recommended to screen the depression or anxiety patients in non-psychopathic hospitals.

Score and Category

The self-rating depression scale (SDS) consists of 20

*Yangpu District Center For Disease Control and Prevention ,(No 1565 Changyang Road Shanghai 200090 , China),*For Correspondence: anle_li@yahoo.com.cn*

questions, from 0 to 3 score measured for every question, the total full score is 60. The self-rating anxiety scale (SAS) is the same as SDS. To better identify different depression status of cancer, the cut-off score classified 5 category in this study: score below half of full score is normal; score 51~59% of full score is tendency for depression or sub-depression; score 60~69% of full score is mild depression; score 70~79% of full score is middle depression; score≥80% of full score is heavy depression. The cut-off scores for anxiety were also classified into 5 categories.

Quality control

All investigators who participated in this study were health professionals who have base-educations of college in each Community Health Care. After training, they went to every patient's home for investigation. To assure the reliability and quality, we simply random sampled 10% of questionnaires grouped by every investigator, and checked their information through telephone investigate.

Data processing and statistics

We set up the database using Epidata 3.0. After data cleaning, SPSS®SPSS 11.5 for Windows © was used to analyze the data. The significance level was set at $p< 0.05$with the $\chi 2$ testused to examine differences among groups.

Results

General information

All 560 patients who should be investigated were selected from the database, and 511 patients completed the questionnaires. The valid rate was 91.3%. In these investigated patients, the male proportion was 38% (194) and the female was 62% (317). The education proportions were: illiterate 4.7%, elementary school 15.3%, junior middle school 35.4%, high middle school 32.7%,university and above 11.9%. The durations since diagnosis were: below 1 year 39.5%, 1-2 years 26.2%, 2-3 years 15.1%, 3-4 years 8.8%, 4-5 years 6.7% and 5 years and above 3.7%.

Specific factors for depression

Age, marriage status and education were important determinants of depression (see Table 1). There was no apparent influence of gender and occupation was not of significant influence. Years since diagnosis was also significant.

Specific factors for anxiety

The total anxiety rate was 32.7% among 511 patients investigated, and the mild anxiety rate was 11.7%; the moderate anxiety rate was 13.5%; the heavy anxiety rate was 7.4%. The tendency rate for anxiety was 25.4%, with

Table 1. The Number and Prevalence of Levels of Depression by Categories of Factors

		Trend for depression	Mild depression	Moderate depression	Heavy depression	Total	Significance
Sex	Male	39 (20.1)	30 (15.5)	58 (29.9)	22 (11.3)	110 (56.7)	$\chi 2$=4.871
	Female	75 (23.7)	60 (18.9)	71 (22.4)	30 (9.46)	161 (50.8)	p=0.301
Age	<30	2 (25.0)	1 (12.5)	4 (50.0)	0 (0.00)	5 (62.5)	
	30~39	7 (43.8)	2 (12.5)	3 (18.8)	0 (0.00)	5 (31.3)	$\chi 2$=36.15
	40~49	17 (20.7)	10 (12.2)	19 (23.2)	6 (7.32)	35 (42.7)	p=0.003
	50~59	41 (23.3)	26 (14.8)	36 (20.5)	17 (9.66)	79 (44.9)	
	≥60	47 (20.5)	51 (22.3)	67 (29.3)	29 (12.7)	147 (64.2)	
Marriage							
	Married	104 (24.3)	67 (15.7)	103 (24.1)	43 (10.1)	213 (49.8)	
	Divorced	2 (15.4)	4 (30.8)	4 (30.8)	0 (0.00)	8 (61.5)	$\chi 2$=54.57
	Lost partner	7 (11.9)	17 (28.8)	17 (28.8)	9 (15.3)	43 (72.9)	p=0.000
	Unmarried	1 (10.0)	2 (20.0)	5 (50.0)	0 (0.00)	7 (70.0)	
Education							
	illiterate	3 (12.0)	5 (20.0)	9 (36.0)	6 (24.0)	20 (80.0)	
	elementary	10 (12.8)	17 (21.8)	29 (37.2)	12 (15.6)	58 (74.4)	$\chi 2$=54.57
	junior	42 (23.3)	27 (15.0)	38 (21.1)	21 (11.7)	86 (47.8)	p=0.000
	high	35 (21.0)	27 (16.2)	43 (25.8)	11 (6.59)	81 (48.5)	
	college	24 (39.3)	14 (23.0)	10 (16.4)	2 (3.28)	26 (42.6)	
Occupation							
	unemployed	2 (11.8)	1 (5.88)	9 (52.9)	2 (11.8)	12 (70.6)	
	employed	19 (24.4)	7 (8.97)	20 (25.6)	8 (10.3)	35 (44.9)	$\chi 2$=19.66
	retired	91 (22.8)	77 (19.3)	93 (23.3)	41 (10.3)	211 (52.9)	p=0.074
	others	2 (11.8)	5 (29.4)	7 (41.2)	1 (5.88)	13 (76.5)	
Duration since diagnosis (years)							
	0-1	51 (25.3)	30 (14.9)	60 (29.7)	21 (10.4)	111 (55.0)	
	1~2	29 (21.6)	28 (20.9)	26 (19.4)	13 (9.70)	67 (50.0)	
	2~3	10 (13.3)	12 (16.0)	25 (33.3)	7 (9.33)	44 (58.7)	$\chi 2$=31.60
	3~4	15 (31.9)	7 (14.9)	8 (17.0)	5 (10.6)	20 (42.6)	p=0.048
	4~5	6 (17.1)	11 (31.4)	4 (11.4)	2 (5.71)	17 (48.6)	
	>5	3 (16.7)	2 (11.1)	6 (33.3)	4 (22.2)	12 (66.7)	
	Total	114 (22.3)	90 (17.6)	129 (25.2)	52 (10.2)	271 (53.0)	

Table 2. The Number and Prevalence of Anxiety by Category of Factors

		Tendency	Mild Anxiety	Moderate Anxiety	Heavy Anxiety	Total	
Sex	Male	49 (25.3)	27 (13.9)	28 (14.4)	14 (7.22)	69 (35.6)	χ^2=2.031
	Female	81 (25.6)	33 (10.4)	41 (12.3)	24 (7.57)	98 (30.9)	p=0.730
Age	<30	1 (12.5)	2 (25.0)	1 (12.0)	0 (0.00)	3 (37.5)	
	30~	4 (25.0)	2 (12.5)	1 (6.25)	1 (6.25)	4 (25.0)	χ^2=11.132
	40~	17 (20.7)	8 (9.80)	14 (17.1)	5 (6.10)	27 (32.9)	p=0.801
	50~	42 (23.9)	19 (10.8)	20 (11.4)	13 (7.39)	52 (29.6)	
	60~	66 (28.8)	29 (12.7)	33 (14.4)	19 (8.30)	81 (35.4)	
Marriage							
	Married	103 (24.1)	51 (11.9)	64 (15.0)	31 (7.24)	146 (34.1)	
	Divorced	7 (50.0)	0 (0.00)	1 (7.14)	1 (7.14)	2 (14.3)	χ^2=16.405
	Lost partner	19 (32.2)	7 (11.9)	3 (5.08)	6 (10.2)	16 (27.1)	p=0.175
	Unmarried	1 (10.0)	2 (20.0)	1 (10.0)	0 (0.00)	3 (30.0)	
Education							
	Illiterate	6 (25.0)	3 (12.5)	5 (20.8)	4 (16.7)	12 (50.0)	
	Elementary	20 (25.6)	12 (15.4)	13 (16.7)	6 (7.69)	31 (39.7)	χ^2=25.629
	Junior	37 (20.4)	19 (10.5)	22 (12.2)	17 (9.39)	58 (32.0)	p=0.059
	High	42 (25.2)	20 (12.0)	23 (13.8)	9 (5.39)	52 (31.1)	
	College	25 (41.0)	6 (9.84)	6 (9.84)	2 (3.28)	14 (23.0)	
Occupation							
	Unemployed	4 (23.5)	2 (11.8)	2 (11.8)	2 (11.8)	6 (35.3)	
	Employed	18 (23.1)	10 (12.8)	9 (11.5)	10 (12.8)	29 (37.2)	χ^2=12.658
	Retired	104 (26.1)	43 (10.8)	56 (14.0)	25 (6.27)	124 (31.1)	p=0.394
	Others	4 (23.5)	5 (29.4)	2 (11.8)	1 (5.88)	8 (47.1)	
Duration since diagnosis (years)							
	0-1	56 (27.7)	23 (11.4)	24 (11.9)	15 (7.43)	62 (30.7)	
	1~2	35 (26.1)	14 (10.5)	19 (14.2)	10 (7.46)	43 (32.1)	
	2~3	16 (20.8)	9 (11.7)	12 (15.6)	10 (13.0)	31 (40.3)	χ^2=26.902
	3~4	10 (22.2)	7 (15.6)	4 (8.89)	2 (4.44)	13 (28.9)	p=0.138
	4~5	9 (26.5)	5 (14.7)	2 (5.88)	1 (2.94)	8 (23.5)	
	5~6	4 (21.1)	2 (10.5)	8 (42.1)	0 (0.00)	10 (52.6)	
	Total	130 (25.4)	60 (11.7)	69 (13.5)	38 (7.44)	167 (32.7)	

Table 3. The Number and Prevalence of Depression and Anxiety Sufferers in Cancer Patients

	Depression					
Anxiety	Normal	Tendency	Mild	Moderate	Heavy	Total
Normal	102 (20.0)	61 (11.9)	40 (7.83)	10 (1.96)	1 (0.20)	214 (41.9)
Tendency	19 (3.72)	45 (8.81)	34 (6.65)	30 (5.87)	2 (0.39)	130 (25.4)
Soft	3 (0.59)	6 (1.17)	8 (1.57)	30 (5.87)	13 (2.54)	60 (11.7)
Middle	1 (0.20)	2 (0.39)	5 (0.98)	42 (8.22)	19 (3.72)	69 (13.5)
Heavy	1 (0.20)	0 (0.00)	3 (0.39)	17 (3.33)	17 (3.33)	38 (7.44)
Total	126 (24.7)	114 (22.3)	90 (17.6)	129 (25.2)	52 (10.2)	154 (30.1)

25.3 for males and 25.5 for females.

There was no significant influence of sex, age, marriage status, education, occupation or cancer duration on the prevalence of the various degress of anxiety (see Table 2).

The distribution of depression accompanied by anxiety

The rate of depression accompany with anxiety was 30.14% in these investigated cancer patients. The ratio of depression with anxiety was 58.78% in depression patients, and the ratio of depression with soft anxiety was 33.11%; the ratio of depression with middle anxiety was 42.86%; the ratio of depression with heavy anxiety was 24.03%. the rate of depression accompany with trend of anxiety was 24.35%. In depression patients, the rate of trend of depression accompany with anxiety was 7.02%; the rate of trend of depression with trend of anxiety was 39.47% (Table 3).

Discussion

Most cancer patients investigated had a certain degree of education, and they were able to express their basic emotions and perceptions. With the patients' cooperation, these returned questionnaires are relatively complete and accurate,. Therefore, the quality of the investigation appeared to be relatively reliable. Considering that the questionnaires were derived from patients' self-evaluation, the standard of cut-off score has been specifically raised slightly and the item 'tendency' has been added in the analysis of data. This approach might reduce the prevalence of the depression or anxiety.

The survey results showed that the respective prevalence of depression and anxiety among cancer patients was 53.0 % and 32.7%, in which depression and anxiety were mainly mild or moderate. The respective prevalence of depression tendency and anxiety tendency

were 22.3 % and 25.4%. The prevalence of depression and anxiety were relatively high among cancer patients aged over 60 or below 30, as well as among patients whose duration since diagnosis was more than 5 years. The above findings showed that the current cancer patients suffer relatively serious depression and anxiety, which had a great impact on the rehabilitation of cancer..

In the future work of the rehabilitation of cancer, there is a need to strengthen the psychological intervention for cancer patients, particularly for young and elderly patients, so as to improve patients' quality of life and rehabilitation results. Depression is a common psychiatric illness, with the prevalence among general population from 2% to 3%[8]. Depression patients are high-risk group of committing suicide, and the risk of suicide exists throughout the disease process, from the period of onset to the rehabilitation period. However, there has been very low rate in diagnosis of depression and effective treatment. Therefore, the awareness and treatment of depression has become a very important issue (Spiegel and Giese-Davis, 2003; Ozono et al., 2005).

Although a few scholars put forward that cancer patients with depressive disorder was an independent unit of diseases, much research has demonstrated that there were identical biological changes between cancer patients with depression and depression patients[9,10]. Among the investigated patients, there were 154 cases in cancer patients with both anxiety and depression, the prevalence rate was 30.14%. The rate of depression patients with anxiety was 58.8% in total depression patients; and the ratio of depression with anxiety tendency was 4.4%. the rate of depression tendency with anxiety was 7.0%. The results showed that the occurrence of depression was associated with that of anxiety. Anxiety and depression, two kinds of mental illnesses, can occur on the same patient and influence each other. This suggests that it is necessary to take integrated psychological intervention methods in the psychological intervention for cancer patients.

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