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A Study on the Status and the Correlation of Stigma in Young Patients with Lung Cancer

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Abstract

Purpose: To explore the correlations among the status of stigma, medical coping, and general self-efficacy in young patients with lung cancer. **Methods:** The convenience sampling method (selecting 123 cases of young patients with lung cancer in our hospital), general questionnaire, Cataldo Lung Cancer Stigma Scale, Medical Coping Modes Questionnaire, and General Self-efficacy Scale. **Results:** In the young patients with lung cancer, the total scores of stigma, medical coping modes, and general self-efficacy are (74.49 ± 6.75), (48.94 ± 4.80), and (18.73 ± 5.43) respectively. According to the multiple linear regression analysis, the education level, monthly personal income, and smoking history are the main factors influencing their stigma. The stigma score is negatively correlated with envisaging, one of the medical coping modes, and general self-efficacy, and positively correlated with dodging and submission. These differences are statistically significant ($p < 0.05$). **Conclusion:** Young patients with lung cancer had moderately high levels of stigma, with education level, monthly personal income, and smoking history being the main influencing factors. Besides, more severe stigma results in worse envisaging and general self-efficacy of the medical coping modes, thus the young patients with lung cancer tended to adopt the coping modes of dodging and submission. Therefore, clinical nurses should strengthen the nursing intervention based on the information-motivation-behavioral skills model in the management of young patients with lung cancer, and provide timely psychological guidance to reduce their stigma and improve their positive coping modes and self-efficacy.

Keywords

Young Patients with Lung Cancer, Stigma, Medical Coping, Self-Efficacy

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1. Introduction

Lung cancer is the respiratory malignancy with the highest incidence and mortality rate in China, which is a great threat to human health and life. The latest global malignancy statistics released by the International Agency for Research on Cancer reveal that the estimated number of new lung cancer cases worldwide in 2020 reaches 2,206,700 and the number of death cases reaches 1,796,100, and its mortality rate accounts for 1/5 of that of other malignancies (IARC, 2021). Among various pathogenic factors of lung cancer, smoking, secondhand smoke, and oil-smoke pollution are the most definite ones (Zou et al., 2017). Surgical resection is the preferred first-choice treatment for early lung cancer. Previously, the incidence of lung cancer was mainly in the elderly, but relevant data (Qu et al., 2013) shows that the incidence in young people has been on the rise in recent years, with the incidence rate ranging from 5% to 22%. Lung cancer diagnosed at an age beyond 45 years old was defined as young lung cancer (Hu et al., 2022). As the patients are relatively young, doctors first consider inflammatory diseases instead of considering further tumor examination, resulting in a high misdiagnosis rate. Thus, the proportion of tumour node metastasis stage III and IV in young lung cancer patients is higher than that in elderly patients diagnosed with lung cancer.

Stigma in young patients is a negative emotional experience of feeling to be excluded, rejected, and condemned by individuals, groups, and society because of the disease and is considered to have lost some of their value, which is one of the main sources of psychological stress for patients (Magno et al., 2019). The stigma is not only detrimental to the recovery, but also has a negative impact on subsequent treatment and rehabilitation, resulting in a sub-health state. It even impacts the patients' families and their work after returning to society (Stergiou-Kita et al., 2017; Suwankhong & Liamputtong, 2016). Most young lung cancer patients are the main economic source of their families, which is easier to cause psychological stress, so the stigma of young lung cancer patients has gradually become the focus of nursing.

Currently, studies on stigma among young patients mainly focus on HIV, tuberculosis, and others, and there is a lack of in-depth studies on young lung cancer patients (Abubakari et al., 2022; Moscibrodzki et al., 2021). The purpose of this study is to investigate the correlations between stigma, medical coping modes, and general self-efficacy in young patients with lung cancer, and to provide scientific evidences for clinical nurses to take effective measures to alleviate young patients' stigma and improve their positive coping modes and self-efficacy.

2. Objects and Methods

2.1. Objects

The convenience sampling method was adopted to select 123 cases of young patients with lung cancer in our hospital from August 2020 to June 2021 as the ob-

jects. Inclusion criteria: 1) Age: 18 - 44; 2) Pathological diagnosis complying with lung cancer criteria; 3) Certain ability to read and understand and complete the questionnaire independently; 4) Awareness of their diseases. Exclusion criteria: 1) Patients with cognitive impairment or mental illness; 2) Patients with language communication disorders; 3) Patients with complications of organic disease of other vital organs. This study was approved by the ethics committee of our hospital (Approval No. B2020-173-01). Patients have given their informed consent and voluntarily participated in this study.

2.2. Tools

2.2.1. General Questionnaire

The general questionnaire, designed by researchers based on previous relevant studies and literature consists of 23 questions, including age, gender, nationality, religion, marriage, place of residence, education level, occupation, monthly personal income, course of disease, medical payment method, receiving psychological counseling, pathology type, chronic disease complication, family medical history, health status of main caregivers, children to be taken care of, smoking history, postoperative treatment, sleeping past 11 p.m., sleep quality, and eating fried or smoked foods.

2.2.2. Cataldo Lung Cancer Stigma Scale (CLSS)

The Chinese version of the Cataldo Lung Cancer Stigma Scale (CLSS) was developed by Professor Cataldo (Cataldo et al., 2011) in 2011, and translated into Chinese by Yang Qianqian et al. (Yang et al., 2014) in combination with the conditions in China. The scale contains 4 dimensions, namely humiliation and shame, social isolation, discrimination, and smoking, with a total of 27 items. The Liker 4-level scoring method is adopted, with 1 for strong disagreement, 2 for disagreement, 3 for agreement, and 4 for strong agreement. Wherein, item 2 is scored reversely, and the total score ranges from 27 to 108, and the score of each dimension is the sum of the score of each item, with higher score indicating higher level of stigma. The average score is classified as mild (≤2.28), low (2.29 - 2.68), moderate (2.69 - 3.08), and high (≥3.09) (Yang, 2015). The Cronbach α coefficient of the scale ranges from 0.599 to 0.844, with good reliability and validity.

2.2.3. Medical Coping Modes Questionnaire (MCMQ)

The Chinese version of the Medical Coping Modes Questionnaire (MCMQ) was developed by Professor Feifel (Feifel et al., 1987) from the United States and translated into Chinese by Shen Xiaohong et al. (Shen & Jiang, 2000). The scale contains 3 dimensions of envisaging, dodging and submission. The Liker 4-level scoring method is used, wherein, items 1, 4, 9, 10, 12, 13, 18 and 19 are scored reversely (Zeng, 2019), and the higher score of each dimension indicates a preference for the corresponding coping mode. The Cronbach α coefficients of each dimension in the scale are 0.69, 0.60 and 0.76 respectively.

2.2.4. General Self-Efficacy Scale (GSES)

The General Self-efficacy Scale (GSES) was developed by RalfSchearZer in 1981 and translated into Chinese by Wang Caikang et al. (Wang et al., 2001), with a total of 10 items. The Liker 4-level scoring method is adopted, with 1 for strong disagreement, 2 for disagreement, 3 for agreement, and 4 for strong agreement. The total scale score is 10 - 40, with the higher score indicating better general self-efficacy of the patient. The results can be divided into 3 levels based on the total score, namely low ($\leq$19), moderate (20 - 30), and high (31 - 40) (Li, 2015). The Cronbach α coefficient of the scale is 0.816, with good reliability and validity.

2.3. Sample Size Calculation

According to the sample size estimation principle, the sample size is 5 times the number of the largest scale items, and it is estimated that 20% of the sample size of this study will be lost. This study consists of 3 scales, among which the MCMQ Scale has the largest number of items, with 20 items in total. Hence, the final sample size is calculated to be 120, and the final sample size of this study is 130.

2.4. Study Methods

The questionnaires were presented to the ethics committee of our hospital prior to the survey and this study was not carried out until the obtaining of the consent. Using the questionnaires, the purpose of this study was notified, and informed consent was obtained from the patients. A uniform instruction was used, and the questionnaires were completed independently in secret. All the questionnaires were completed by the objects, and were checked and collected on the spot by the researchers upon completion. Any unfilled questionnaires found shall be verified in time through the communication with the patients, and any hints or verbal instructions shall be avoided during the distribution of the questionnaires.

2.5. Statistical Methods

The data are double-checked for entry and software spss25.0 is used for statistical analysis. Descriptive analysis, frequency analysis, *t*-test for independent samples and univariate ANOVA test are used to describe and test the general information and stigma characteristics of young patients with lung cancer. The Pearson correlation analysis is used to explore the relationships among the stigma, medical coping modes, social support and general self-efficacy of young patients with lung cancer. The multiple linear regression analysis is used to detect the main influencing factors of patients' stigma.

3. Results

In this study, 130 questionnaires were distributed with 123 validly collected, and

the effective rate was 94.6%.

3.1. Stigma Scores of Young Patients with Lung Cancer

The results of this study indicate that 70 of the 123 young patients with lung cancer (56.9%) have a moderate or higher level of stigma and the CLSS shows a total stigma score of (74.49 ± 6.75). The scores for humiliation and shame, social isolation, discrimination, and smoking are (39.04 ± 4.25), (15.75 ± 1.35), (9.04 ± 0.91) and (10.66 ± 3.05) respectively, as detailed in Table 1. The univariate analysis of general information shows that the differences in stigma scores for place of residence, education level, occupation, monthly personal income, health status of main caregivers, smoking history and postoperative treatment are statistically significant ($p < 0.05$), as detailed in Table 2. The results of the multiple linear regression analysis show that education level, monthly personal income and smoking history are the main factors influencing the stigma of young patients with lung cancer, as detailed in Table 3.

3.2. Score of Medical Coping Modes

The results of this study indicate that the total score of medical coping modes of 123 young patients with lung cancer is (48.94 ± 4.80), wherein, the scores of envisaging, dodging and submission are (18.91 ± 5.11), (17.63 ± 2.01) and (11.40 ± 3.54) respectively. When compared with the Chinese general patient norm, the score of envisaging is lower, and that of dodging and submission is higher than the Chinese norm. The differences are all statistically significant ($p < 0.05$), as detailed in Table 4. Correlation analysis shows that stigma scores are negatively correlated with envisaging and positively correlated with dodging and submission, as detailed in Table 5.

3.3. Score of General Self-Efficacy

The results of this study indicate that the total general self-efficacy score of 123 young patients with lung cancer are (18.73 ± 5.43), with 83 cases (67.5%) at the low level, 35 cases (28.5%) at the moderate level and 5 cases (4.1%) at the high

Table 1. Stigma scores of young patients with lung cancer (n = 123; score, $\overline{X}$ ± S).

Item	Score	Average score for the item	Stigma level (n/%)			
			Mild	Low	Moderate	High
Total stigma score	74.49 ± 6.75	2.76 ± 0.25	1 (0.8)	52 (42.3)	62 (50.4)	8 (6.5)
Humiliation and shame	39.04 ± 4.25	2.79 ± 0.30	1 (0.8)	50 (41)	52 (42.6)	19 (15.6)
Social isolation	15.75 ± 1.35	2.62 ± 0.23	4 (3.3)	81 (65.9)	36 (29.3)	2 (1.6)
Discrimination	9.04 ± 0.91	3.01 ± 0.30	0 (0.0)	27 (22)	63 (51.2)	33 (26.8)
Smoking	10.66 ± 3.05	2.66 ± 0.76	22 (17.9)	44 (35.8)	53 (43.1)	4 (3.3)

Table 2. Univariate analysis of general information on stigma in young patients with lung cancer ($\bar{X}$ ± S).

Variable	Group	$\bar{X}$ ± S	t/F	p	LSD	Variable	Group	$\bar{X}$ ± S	t/F	p	LSD
Gender	Male	75.54 ± 6.39	1.94	0.17		Pathological type	① Small cell carcinoma	69.00 ± 0.00	0.75	0.56	
	Female	73.81 ± 6.92					② Large cell carcinoma	74.33 ± 4.51			
Religion	Yes	76.25 ± 7.93	0.28	0.60			③ Adenocarcinoma	74.58 ± 6.92			
	No	74.43 ± 6.733					④ Squamous carcinoma	69.33 ± 2.52			
Marriage	Unmarried	74.67 ± 3.50	0.22	0.88			⑤ Others	76.80 ± 4.66			
	Married	74.53 ± 6.99				Chronic disease complication	Yes	77.18 ± 5.79	1.94	0.17	
	Divorced	74.00 ± 0.00					No	74.22 ± 6.80			
Place of residence	① City	71.60 ± 7.11	20.22	0.00	③ > ①	Family medical history	Yes	74.08 ± 5.35	0.05	0.82	
	② Urban area	74.44 ± 4.72			② > ①		No	74.53 ± 6.91			
	③ Rural area	80.03 ± 4.31			③ > ② > ①	Receiving psychological counseling	Yes	72.00 ± 0.00	0.14	0.71	
Education level	① Primary and below	79.50 ± 5.32	8.81	0.00	① > ②		No	74.51 ± 6.77			
	② Junior high school	79.00 ± 4.46			② > ③	Main caregivers	① Children	74.50 ± 7.78	0.59	0.67	
	③ Senior high school/secondary specialized school	77.18 ± 6.91			③ > ④		② Spouse	74.25 ± 6.96			
	④ College for professional training	75.57 ± 8.91			④ > ⑤		③ Parents	75.22 ± 5.59			
	⑤ Bachelor	70.66 ± 4.22			⑤ > ⑥		④ Siblings	76.00 ± 0.00			

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			F	p					F	p	
	⑥ Master and above	68.75 ± 2.76			① > ⑥		⑤ Others	84.00 ± 0.00			
Occupation	① Worker	80.54 ± 2.87	5.14	0.00	① > ②	Health status of main caregivers	① Good	73.41 ± 7.01	3.84	0.02	② > ①
	② Farmer	73.00 ± 0.00			② > ③		② Moderate	75.85 ± 5.90			③ > ②
	③ Scientific and technological personnel	69.00 ± 0.00			① > ③		③ Poor	83.50 ± 3.54			③ > ①
	④ Teacher	71.13 ± 3.83			④ > ③	Smoking history	① Yes	79.12 ± 5.23	8.55	0.00	① > ②
	⑤ Administrative officer	69.92 ± 5.35			⑤ > ③		② No	73.35 ± 6.62			
	⑥ Medical personnel	71.00 ± 5.43			⑥ > ⑤	Number of cigarettes smoked per day	① ≤10	73.45 ± 6.47	7.29	0.00	② > ①
	⑦ Self-employed/ business/ enterprise/ service worker	73.90 ± 5.44			⑦ > ⑥		② 11 - 20	81.77 ± 3.77			② > ③
Monthly personal income	① ≤CNY 2,000	80.50 ± 1.91	10.11	0.00	① > ⑥		③ 21 - 30	81.00 ± 0.00			③ > ①
	② CNY 2001 - 4000	80.40 ± 4.56			② > ③		④ 31 - 40	76.50 ± 7.51			④ > ①
	③ CNY 4001 - 6000	77.74 ± 5.28			③ > ④	Years of smoking	① ≤5	73.45 ± 6.56	5.23	0.00	② > ①
	④ CNY 6001 - 8000	73.90 ± 9.09			④ > ⑤		② 6 - 10	78.75 ± 4.53			④ > ②
	⑤ CNY 8000 - 10,000	72.48 ± 4.78			⑤ > ⑥		③ 11 - 15	77.25 ± 7.41			③ > ①
	⑥ >CNY 10,000	69.33 ± 3.69			② > ⑥		④ 16 - 20	80.50 ± 5.74			④ > ①

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Medical payment method	① Self-paying	81.50 ± 2.12	2.23	0.07	Postoperative treatment	① Yes	76.76 ± 8.19	3.28	0.04 ① > ②
	② Medical insurance or social security	74.38 ± 6.66				② No	73.69 ± 5.92		
	③ Public expense	67.50 ± 6.81			Daily sleep	① Good	74.88 ± 6.58	0.11	0.89
	④ New rural cooperative medical system	78.60 ± 5.18							
	⑤ Others	76.33 ± 7.51				② Normal	74.28 ± 6.99		
						③ Poor	74.89 ± 5.62		
					Eating fried and smoked food	① Yes	74.40 ± 5.23	0.34	0.72
						② No	74.57 ± 7.12		

Table 3. Multiple linear regression analysis of influencing factors of stigma of young patients with lung cancer.

Predictor variable	Unstandardized coefficient β	Standard error	Standardization coefficient Beta	t	p
(Constant)	74.16	4.42		16.77	0.00
Place of residence	0.70	0.87	0.08	0.80	0.42
Education level	−1.02	0.47	−0.22	−2.17	0.03
Occupation	0.08	0.18	0.03	0.42	0.68
Monthly personal income	−1.38	0.42	−0.32	−3.3	0.00
Health status of main caregivers	1.05	0.93	0.08	1.12	0.26
Smoking history	4.25	2.02	0.26	2.10	0.04
Number of cigarettes smoked per day	−0.48	1.16	−0.04	−0.41	0.68
Years of smoking	−0.05	1.03	−0.01	−0.05	0.96
Postoperative treatment or not	1.82	1.03	0.13	1.76	0.08

Note: The stigma scores are the dependent variables and the variables in the general information are independent variables, $R = 0.46$, $R^2 = 0.41$.

Table 4. Score of coping modes for young patients with lung cancer ($\bar{X} \pm S$).

Item	Score	Norm	t	p
Envisaging	18.91 ± 5.11	19.48 ± 3.81	−65.363	0.00
Dodging	17.63 ± 2.01	14.44 ± 2.97	−178.647	0.00
Submission	11.40 ± 3.54	8.81 ± 3.17	−121.07	0.00

Table 5. Correlation between coping modes and stigma in young patients with lung cancer (r).

Item	Total stigma score	Humiliation and shame	Social isolation	Discrimination	Smoking
Total score of medical coping	−0.253**	−0.246**	−0.349**	−0.028	−0.053
Envisaging	−0.588**	−0.625**	−0.590**	−0.257**	−0.091
Dodging	0.166	−0.180*	−0.213*	−0.05	−0.006
Submission	0.600**	0.670**	0.498**	0.362**	0.063

Note: * denotes $p < 0.05$, and ** denotes $p < 0.01$.

level. The scores are lower than those of Chinese general patient norm, with statistically significant differences ($p < 0.05$), as detailed in Table 6. The results of the correlation analysis show that the stigma scores are negatively correlated with the general self-efficacy scores ($p < 0.05$), as detailed in Table 7.

4. Discussion

4.1. Current Status of Stigma among Young Patients with Lung Cancer

Stigma in young patients with lung cancer is a negative emotional experience of feeling to be excluded, rejected and condemned by individuals, groups and society because of the disease and are considered to have lost some of their value, which is one of the main sources of psychological stress for patients (Magno et al., 2019). The data in Table 1 show that the total stigma scores of young patients with lung cancer is (74.49 ± 6.75), and 70 cases (56.9%) have moderate to high level of stigma. This may be related to the fact that most of the patients in this study are the breadwinners of the family, whose social and working stability are greatly affected and challenged, and passive or active smoking causes fear, low self-esteem and social rejection to them, leading to an increased sense of stigma. The data in Table 3 shows that the main influencing factors include education level, monthly personal income and smoking history. Higher education level of patients indicates the stronger working ability, higher monthly personal income and corresponding higher medical insurance. Therefore, the patients will face lower disease and financial pressure in the treatment, and will take positive approaches to actively learn about the disease, cooperate in the

Table 6. General self-efficacy scores of young patients with lung Cancer (n = 123, score, $\bar{X} \pm S$).

Item	General self-efficacy	Norm	t	p	Self-efficacy level (n/%)		
					Low	Moderate	High
Score	18.73 ± 5.43	28.64 ± 5.21	26.95	0.00	83 (67.5)	35 (28.5)	5 (4.1)

Table 7. Correlation between general self-efficacy and stigma in young patients with lung cancer (r).

Item	Stigma	Humiliation and shame	Social isolation	Discrimination	Smoking
General self-efficacy	−0.627**	−0.706**	−0.487**	−0.287**	−0.1

Note: ** denotes $p < 0.01$.

treatment process, regulate their own psychological state, and feel less stigma than those with lower education level (Chen et al., 2014; Ren, 2019). Early symptoms of lung cancer are not specific, and it is often ignored because of similar symptoms as other respiratory diseases. Therefore, the cancer is already in the middle or late stage when it is diagnosed. At this time, such disease with more difficult treatment and long prognosis time results in the aggravated medical expenses of patients. And those with low monthly personal income are overburdened with huge treatment expenses, leading to strong self-blame and guilt, and aggravation of the stigma. Currently, a widespread public perception is that smoking is a major contributor to lung cancer. Rejection and condemnation from others and fear, shame, guilt and self-blame of patients themselves result in the increased stigma. Therefore, in clinical work, clinical nurses with psychology-related qualifications can provide targeted psychological interventions for young patients with lung cancer, so as to adjust their psychological state, correct wrong behaviors and instruct them to regulate themselves to alleviate the stigma.

4.2. Correlation between Stigma and Medical Coping in Young Patients with Lung Cancer

Medical coping is the subconscious behavioral response and psychological strategy of patients when face with diseases. Positive and effective coping modes can have a positive impact on promoting disease regression, while negative coping modes can lead to disease exacerbation and have a negative impact on health (He et al., 2015). The data in Table 4 show that young patients with lung cancer have a total medical coping score of (48.94 ± 4.80), wherein, the scores of envisaging, dodging and submission are (18.91 ± 5.11), (17.63 ± 2.01), and (11.40 ± 3.54) respectively. Differences among three coping modes are statistically significant compared to Chinese general patient norm. The data in Table 5 show that the stigma score of young patients with lung cancer is negatively correlated with envisaging and positively correlated with dodging and submission. It indicates that for young patients with lung cancer, the diagnosis of cancer is a huge

stressful event, and out of fear of "incurable disease", patients tend to adopt a dodging or submission attitude to deal with it negatively and are unwilling to face it, leading to an increase in negative emotions. The negative emotions aggravate as the stigma, affecting their ability to take positive and effective coping modes. Patients with more severe stigma tend to adopt negative coping modes to cooperate with treatment or even give up treatment. Hence, it is necessary to introduce the new progress and successful cases of disease treatment to such patients in clinical work and encourage them to express negative emotions and improve confidence.

4.3. Correlation between Stigma and Self-Efficacy in Young Patients with Lung Cancer

Self-efficacy refers to the self-confidence of individuals in their ability to successfully perform a specific behavior, as well as the perception and evaluation of their own behavioral ability (Bandura, 2012). Enhancing self-efficacy is conducive to improving self-managing ability and mitigating the stigma. The data in Table 6 show that the total general self-efficacy score of young patients with lung cancer is (18.73 ± 5.43), and most of them are at a low level (83 cases, accounting for 67.5%). The differences are statically significant compared to the Chinese general patient norm, indicating that the self-efficacy level of young patients with lung cancer in this study is general. The data in Table 7 show a negative correlation between stigma scores and general self-efficacy scores, indicating that the higher the patients' self-efficacy is, the lower the level of stigma will be. Patients with lower self-efficacy are less likely to achieve their goals and have the weaker ability of behavioral motives. Therefore, it is necessary to strengthen effective communication in clinical work to help them adjust their mentality, build confidence in overcoming the disease, improve their self-efficacy, and mitigate the stigma to lay a good foundation for the follow-up treatment and good clinical prognosis.

5. Conclusion

Young patients with lung cancer had moderately high levels of stigma, with education level, monthly personal income, and smoking history being the main influencing factors. Besides, more severe stigma results in worse envisaging and general self-efficacy of the medical coping modes, thus the young patients with lung cancer tended to adopt the coping modes of dodging and submission. Therefore, the clinical nurses shall strengthen psychological interventions in young patients with lung cancer, provide them with timely psychological guidance, reduce psychological burden, mitigate the stigma, and improve their positive coping and self-efficacy. However, this study is only a single-center status quo study, and the small sample size is relatively limited. Hence, there may be a deviation in the results (Liu et al., 2019). Future studies of multicenter longitudinal big data could be carried out to provide more reliable evidence for conclusions.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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