

A Cross-sectional Survey and Analysis on Nurses' Cognition of Health Law Knowledge in Tumor Hospital

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Abstract: Under the current social background, cancer patients' needs, legal awareness, and awareness of rights protection are more intense, which will be a more significant test for nurses in cancer-specialized hospitals. To investigate nurses' knowledge of health law in tumor hospitals to analyze the reasons, take corresponding measures to arouse attention, and improve nurses' awareness of prevention; this descriptive study was designed to determine nurse knowledge and cognition of health law in tumor hospitals. The research used 358 nurses who had worked for over a year in a tertiary tumor hospital in October 2021. A self-designed questionnaire collected the data evaluated by the SPSS 20 data analysis program. According to 358 valid questionnaires collected, the overall cognition level of nurses in tumor hospitals was low; the lowest score was 30, the highest score was 95, and the average score was 66.50 ± 14.59 . The degree of health law knowledge was directly proportional to nurses' degree and professional title ($P < 0.05$). The overall health law knowledge of nurses in tumor hospitals is lacking, and the standardized training of health law knowledge of nurses should be strengthened. There were statistical differences in cognition scores of health law among nurses with different educational backgrounds, length of service, and departments. ($P < 0.05$).

Keywords: Tumor; Hospital; Nurse; Legal knowledge

1. Introduction

In recent years, with the development of medical technology, service areas continue to expand, and service objects continue to increase, involving more and more extensive legal issues^[1-4], more and more complex, medical disputes around the rising trend year by year^[5]. Being familiar with medical laws and regulations will help medical workers better protect themselves while doing their jobs. whereas, Nurses have relatively weak cognition of laws and regulations related to medical care. Sweeney CF et al^[6] reported from 1990 to 2004, during 14 years, there are 1715 paid malpractice claims, and nurse practitioners were independently responsible for the event.

As the backbone of nursing for cancer patients, nurses in cancer-specialized hospitals have high expectations for nursing services from cancer patients and their families due to the particularity of service objects, and their requirements are also increasing^[7]. Willmott et al^[8] highlighted that Concerns about legal and professional repercussions contributed to the undertreatment of patients' symptoms, Education is urgently required to strengthen nurses' knowledge of the legal protections supporting the provision of appropriate palliative medication.

Related research^[9-10] showed that the cognition level of health laws and regulations of nurses in general hospitals was uneven and needed to be further improved. Health laws and regulations are the most important part of nurses' professional laws and regulations, which are closely related to nurses' work. To improve the quality of clinical care and reduce the occurrence of medical disputes, nurses must have certain knowledge of health laws and regulations. If they lack relevant knowledge, it is very detrimental to nurses' work. On the other hand, due to the particularity of the work in the oncology department, oncology nurses have a large workload and are at risk of occupational exposure and occupational injury at any time.

At present, there are relatively few studies on the cognitive level of nurses in tumor hospitals.

Through the investigation of the cognition status of health legal knowledge of nurses in specialized tumor hospitals, this study discusses the status quo and influencing factors of health legal knowledge of nurses in specialized tumor hospitals, to know the deficiencies and explore corresponding countermeasures, and provide first-hand information for nursing managers. The report is as follows.

2. Objects and methods

2.1 Respondent

In October 2021, a questionnaire star was used to conduct a medical and health survey on in-service nurses in a tertiary tumor hospital. Inclusion criteria: ① In-service nurses who have worked in the hospital for more than one year and qualified for the registration of a nurse professional certificate. ② Volunteer to be surveyed. Exclusion criteria: ① The nursing department is responsible for the relevant teachers of nursing laws and regulations training. A total of 367 valid questionnaires were collected, and 358 valid questionnaires were screened. As shown in Table 1.

Table 1: General information of survey subjects.

Project	Frequency	Composition ratio (%)
Gender		
Female	331	92.5
Male	27	7.5
Length of service(Y)		
2-5	111	31
6-10	105	29.3
11-14	70	19.6
≥ 15	72	20.1
Education background		
Technical secondary school	4	1.1
College	17	4.7
Bachelor degree	319	89.1
Master degree or above	18	5.0
Professional title		
(Deputy)Chief nurse	15	4.2
Nurse in	133	37.2
Nurse practitioner	150	41.9
The nurse	60	16.8
Position		
Nursing Manager	21	5.9
Clinical Nurse	304	84.9
Nurse of medical technology department	33	9.2
Department		
Surgeryl department	102	28.5
Internal medicine	71	19.8
Radiotherapy department	56	15.6
Gynecology & Pediatrics Dept	87	24.3
Medical Technology Department	36	10.1
ICU/ Operating room	6	1.7

2.2 Survey tools

The questionnaire was used to collect data. The questionnaire consists of two parts: ①General information: nurses' length of service, gender, professional title, education background, position, etc. ②Health related laws and regulations knowledge questionnaire: refer to Luo Qin5 《Nurses health laws and regulations knowledge questionnaire》. Based on the blood Donation Law, Measures of the People's Republic of China for the Management of Infectious Diseases, Regulations on Nurses, Regulations on the Handling of Medical Accidents, and Measures of the People's Republic of China for the Management of Nurses, refer to the annual laws and regulations training and examination questions of the nursing department of this tumor hospital, combined with the actual work of the design. After the questionnaire was designed, six nursing experts and one expert responsible for the training of laws and regulations of this tumor hospital were invited to evaluate the questionnaire. The questionnaire was revised according to experts' comments. Experts believed that the quality of the questionnaire was good and its credibility was high. The questionnaire was released in the WeChat group of the research department, and a preliminary survey was conducted among 18 nurses. After the survey, a follow-up

survey was conducted on the 18 respondents, and it was found that the rate of compliance was 92 percent. There are 20 questions in this knowledge questionnaire, Each question has four choices: A, B, C and D. The time to answer each question is 2-10 minutes. of which are single-choice questions. Each question is 5 points, and the full score is 100 points. 0-60 score is poor, 65-80 score is average, 85-100 score is good For details, see Table 2.

2.3 Survey methods

The questionnaire was used to edit the electronic questionnaire. After obtaining the consent of the nursing department of the hospital, the research team members forwarded the link of the questionnaire to the WeChat group of the nursing department with the cooperation of the head nurses of each department. The purpose of the survey was attached, indicating that the survey was anonymous and would not affect their work assessment. This study was approved by the Medical Ethics Committee of our hospital, and the head nurse of the investigated department signed the informed consent. All the investigated subjects in the department signed the informed consent. The subjects answered the questionnaire online. To prevent the questionnaire from being missed or filled in repeatedly, the same IP address, computer or mobile phone should be set in the permission management of the questionnaire star to be filled in only once. The questionnaire can be submitted only when all options are filled in completely, and the collection period is set to 48 hours.

The minimum sample size is calculated by using the method of 10 times the number of variables, there are 20 variables in this survey, and the calculated result is $20 \times 10 = 200$. A total of 368 questionnaires were collected, and the completed questionnaires were checked by two people. Nine questionnaires with less than 2 minutes of answer time were deleted, and 358 valid questionnaires were obtained. The efficiency of questionnaire recovery was 97.6%.

2.4 Statistical methods

SPSS 20 statistical software was used to process the data. Statistical methods included descriptive analysis, one-way analysis of variance, T-test, and multiple comparisons using the Bonferroni method, multivariate analysis was performed using linear regression.

3. The results

Table 2: Number of correct answers (n=358), correct rate (%).

The title	Correct N	Rate (%)
Obtaining the following legal documents means that the holder is qualified to practice nursing and can engage in professional and technical nursing activities	340	94.97
Registration as a nurse practitioner is valid for several years	353	98.60
Implementation time of the Nurses Ordinance	332	92.74
The implementation time of tort Liability Law of the People's Republic of China	165	46.09
China began to implement the "Nurse management measures of the People's Republic of China" time	173	48.32
The blood donation Law stipulates that the blood donation system implemented by the state is	204	56.98
Age at which healthy citizens volunteer to donate blood	325	90.49
The amount of blood collected by blood donors each time and the interval between two collections are as follows:	230	64.25
How long should the blood samples of recipient and donor be stored in the refrigerator at 2 ~ 6°C at least after blood is sent out	20	5.71
Nursing graduates applying for registration should complete clinical practice in a teaching or general hospital within a minimum period of time	183	51.12
Infectious diseases fall into several categories	282	78.77
Which one belongs to class A notifiable infectious disease	316	88.27
The following statutory class B infectious diseases are	251	69.84
For class A infectious diseases, the reporting time to the local disease control center is	11	3.07
When will the Regulations on the Prevention and Handling of Medical Disputes come into force	141	39.39
Medical malpractice is	345	96.37
There are several levels of medical malpractice	298	82.88
How many hours should an autopsy be performed after death? Produce medical treatment dispute to need to undertake autopsy, autopsy time should be in how long after the death	192	53.63
All resuscitation records should be made up within a few hours after resuscitation	339	94.69
The following are the nurse's rights	241	67.32

The lowest score was 30 points, the highest score was 95 points, and the average score was 66.50 ± 14.59 points, indicating that nurses in cancer hospitals had a poor grasp of health law knowledge,

which was consistent with the results of some related studies on clinical nurses in general hospitals^[5,11], the correct answer rate and score of nurses' knowledge of health laws and regulations are shown in Table 2 and Table 3.

As can be seen from Table 2, the accuracy rates of "the time to report to the local disease control center for Class A infectious diseases" and "how long the blood samples of the recipient and donor should be kept in the refrigerator at 2-6 °C after blood is sent" are low, which are 3.26% and 5.71% respectively. The correct rate of "how many years is the validity period of nurse practice registration" and "the definition of medical malpractice" was 98.64% and 96.47%, respectively.

Table 3: Scores of nurses' health legal knowledge survey (n=358).

Number of points (points)	Cases	Percentage (%)
0-60	142	39.7
65-70	92	25.7
75-80	68	19.0
85-90	55	15.4
95-100	1	0.0

As can be seen from Table 3, the number of nurses scoring 60 or below accounted for a large proportion, 25.9% of nurses had poor knowledge of health laws and regulations. 168 nurses with 65 to 80 points, accounting for 46.8%, and nearly half of them have a general knowledge of health laws and regulations; There are 98 students with 85 to 100 points, accounting for 27.3% of the total number of students. The students with good scores are slightly better than those with 60 or below points, but only 16 students with 95 points are relatively small.

Table 4: Single factor analysis of general information of respondents and their cognition of health laws and regulations (n=358).

Project	Average	F/t	t
Gender		0.040	0.968
Female	66.11 ±15.40		
Male	66.22 ±14.02		
Length of Service(Y)		4.106	0.007*
≅ 5	68.45±13.63		
6-10	67.40 ± 13.91		
11-14	66.34 ± 12.59		
≥ 15	61.76 ± 14.64		
Education background		8.609	0.000 *
Technical secondary school	43.75 ± 17.97		
College	54.41 ± 13.79		
Undergraduate course	67.47 ± 13.45		
Master degree or above	63.89 ± 11.58		
Professional title		1.560	0.199
The nurse	66.72 ± 14.55		
Nurse practitioner	68.29 ±13.94		
Nurse-in-charge	64.40 ± 13.52		
(Deputy)Chief nurse	64.33 ± 12.23		
Position		2.850	0.059
Nursing manager	61.82 ± 10.18		
Clinical nurse	67.17 ±13.57		
Nurse of medical technology department	62.42 ± 17.55		
Department		1.789	0.114
Surgery department	67.50 ±14.05		
Internal medicine	67.15 ±13.18		
Gynecology(pediatrics)	64.64 ± 13.00		
Department of medical	68.07 ± 13.02		
ICU/operating room	60.28 ±16.99		

Note: Test standard * : P<0.05

Single-factor analysis of cognition of health law knowledge (Table 4)

Pair comparison results of the influence of the length of service, education background, post, and department on the cognition degree of health law. (Table 5~ 6)

Table 5: Bonferroni test results of cognition score of health law knowledge of nurses of different ages.

Length of service(Y)	t	p
≤5 and 6-10	1.278	1.000
≤5 and 11-14	2.254	1.000
≤5 and ≥15	7.149	0.005 *
6-10 and 11-14	0.976	1.000
6-10 and ≥15	5.871	0.037 *
11-14 and ≥15	4.895	0.222

Note: Test level $\alpha=0.05/6 = 0.0083$, * : $P<0.05$

Education background	t	p
Technical secondary school and college	10.662	0.923
Technical secondary school and undergraduate	23.507	0.004 *
Technical secondary school and master's or above	20.139	0.048*
Junior college and Undergraduate	12.845	0.001 *
College degree or above	9.477	0.247
Bachelor's or master degree or above	3.368	1.000

Table 6: Bonferroni test results of cognition score of health law knowledge of nurses with different educational backgrounds.

Project	B	t	p	95%CI
Length of service(Y)	-0.137	-2.631	0.009*	(-3.037, -0.439)
Education	0.203	3.702	0.000*	(3.559, 11.623)
Position	0.078	1.362	0.174	(-1.253, 6.903)
Department	-0.062	-1.134	0.258	(-1.661, 0.446)

Note: Test level $\alpha=0.05/6 = 0.0083$, * : $P<0.05$

As can be seen from the above table, length of service is negatively correlated with nurses' cognition of laws and regulations, while educational background is positively correlated with it ($P<0.05$). There was no statistical significance between the post and work department and score.

4. Discussion

With the development of medical models and the change in health concepts, the demand of patients is gradually increasing, and their legal concept and consciousness of safeguarding rights are also constantly improving^[12]Patients in specialized cancer hospitals have a long period of illness, high cost, and repeated hospitalization, resulting in great mental and economic pressure on patients, so cancer patients have a stronger awareness of rights protection. Nurses in oncology hospitals are more likely to become the focus of social attention due to their service quality, service attitude, and related nurse-patient relationship. The education of nurses in China is mostly related to medical technology, with little knowledge of humanities^[13]. Health laws and regulations are the foundation for the smooth development of medical care and the fundamental guarantee for the legitimate rights and interests of medical staff and patients^[14]. Therefore, nursing staff should not only have solid professional knowledge and superb nursing technology but also have rich legal knowledge.

The results of this survey showed that the overall cognitive level of nurses in tumor hospitals was low, with the lowest score of 30 and the highest score of 95, with an average score of 66.50 ± 14.59 . Nurses in tumor hospitals have poor knowledge of health law and their legal awareness needs to be strengthened.

Single-factor analysis of variance was used for statistical analysis of general data, and the results showed that gender, post, and professional title had no statistical difference in cognition score of health law for nurses ($P>0.05$), and there was no statistical difference among nurses with different professional title. This result is related to relevant studies. The main reason for the inconsistency is that the tumor hospital conducts relevant laws and regulations knowledge training and assessment for new employees and nurses during the 5-year training period every year, so the nurses with low professional titles have higher scores. There was a statistical difference in cognition score of health law among nurses with different educational backgrounds ($P<0.05$), which was similar to that of Luo Qin^[5], li Zh^[15]Consistent. The cognition score of health law of nurses of different ages and departments was statistically significant.(See Table 4)

Multiple comparisons were made within the group and paired by the Bonferroni method. The results showed that the scores of nurses with ≤ 5 years and 6-10 years were higher than those with ≥ 15 years, and the difference was statistically significant ($P<0.05$), which was related to the annual training and

assessment of junior nurses in this hospital. Although nurses who have worked for more than 15 years have rich clinical work experience, they are less active in learning and have a poor grasp of some laws and regulations requiring memorization. The results of the survey and Li Zhihui^[15]The working years obtained in 11~20 years of mastery is best inconsistent. (See Table5)

The results of this study show that nurses with bachelor's degrees have the best knowledge of professional laws and regulations, followed by those with master's degrees, and those with technical secondary school and college degrees are the worst. Nurses with bachelor's degrees, master's above technical secondary school score comparison and college nurses compared with undergraduate nurses score were statistically significant ($P < 0.05$), convenient and open education-related laws and regulations in the school education, and compared with undergraduate and graduate students, college students and secondary specialized school students' ego to protect consciousness weak, self-study ability is relatively poor, managers pay attention to strengthen the training of legal consciousness of the people at ordinary times.(See Table 6)

Multiple comparisons between different departments showed that the scores of health law knowledge between medical and technical departments and ICU/operating room nurses were statistically significant ($P < 0.05$), while there was no statistical difference between the scores of other departments ($P > 0.05$). The deviation of this result may be related to the small number of medical and technical departments and ICU/ operating room nurses participating in the answer sheet. (See Table 2-6)

5. Conclusion

As the patient uses the legal weapon to measure the consciousness of medical treatment behavior and consequence to enhance unceasingly, the nursing work has a scientific nature, the service sex is a strong characteristic, and slight negligence inevitably produces medical treatment dispute. As a high-risk occupation, nurses in oncology hospitals should strengthen their awareness of health laws and regulations. Nursing managers can predict the cognition status of nurses to health laws and regulations to a certain extent to provide a reference for the development of targeted training plans. Because this study was only conducted in a specialized tumor hospital, the sample size was relatively simple and had certain limitations, which may have a certain impact on the representativeness and extensibility of the results. Therefore, the sample size should be expanded for further study in the future.

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