

Standardized Construction Situation and Influencing Factors of Rabies Post-exposure Prophylaxis Clinics in Guizhou Province

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Abstract: The aim of the research is to understand the current situation of the standardized construction of rabies exposure and disposal clinics in Guizhou Province, and analyze its main influencing factors. Census and multi-stage sampling methods were adopted to investigate the setting of exposure treatment outpatients in province, city, county and township in Guizhou Province. The coverage rate of rabies exposure treatment clinics was 78.13%. 16.00% of clinics had no 24-hour duty or telephone duty system. 74.00% of outpatient informed consent forms or registration information for rabies exposed populations were not filled out in a standardized manner. And 12.12% of clinics of township (community) had no wound irrigation equipment. Among the influencing factors, capital investment was the most notable (100%), followed by human resources (90.42%) and inattention of leadership (75.00%). The failure of rabies exposure treatment clinics to achieve standardized construction is mainly manifested in the lack of functional divisions, incomplete wound treatment equipment, and imperfect clinic systems. Health expenditures, leadership attention, and human resources are the main factors affecting the standardized construction of clinics.

Keywords: Rabies; Exposure Treatment Clinic; Standardized Construction; Influencing Factors

1. Introduction

Rabies is an acute infectious disease with a case fatality rate approaching 100% [1], and timely and effective post-exposure treatment is the only effective means of preventing rabies after a human is bitten by an animal carrying the rabies virus [2]. As the main place for

post-exposure prophylaxis and treatment, the scientific and standardized setting and management of exposure disposal clinics can provide good objective conditions and guarantees for timely and effective post-exposure disposal. This paper investigates and analyzes the standardized construction of rabies exposure and disposal clinics in Guizhou Province to understand the current status of standardized construction of rabies exposure and disposal clinics in Guizhou Province.

2. Objects and Methods

2.1 Objects Selection.

This study used census and multi-stage stratified random sampling, and provincial and 9 municipal (prefecture) level medical and health institutions by city (prefecture), 2 counties (districts) by city (prefecture) and two township counties (districts) were randomly selected to investigate the standardized construction of rabies exposure treatment clinics in medical and health institutions.

2.2 Survey Methods and Content Design.

A unified questionnaire conducts the survey of selected medical and health institutions in the form of questionnaire survey and in-depth interview. The questionnaire mainly includes the distribution of rabies exposure treatment clinics, hardware construction, management system, personnel situation, the number of exposed people, and construction opinions or suggestions.

2.3 Data Statistics and Analysis.

Epidata3.0 software was used for input survey data and Microsoft Excel 2007 was used for data analysis.

3. Results

Among the 64 medical and health institutions

in this survey, 50 rabies exposure treatment clinics were opened and put into use, with a coverage rate of 78.13%. Among them, the number of provincial, city (prefecture), county (district) and township (community) outpatient clinics is 1,4,12 and 33 respectively. Further investigation results of 50 rabies exposure clinics are as follows:

3.1 Hardware Facilities

3.1.1 Area and functional zoning of outpatient rooms

58.00% (29), which are mainly attached to

immunization clinic, surgical treatment room, comprehensive clinic, emergency and preventive care departments. Outpatient area of <15m² accounted for 9.43% (5 companies). The proportion of outpatient wound treatment area, vaccine storage and vaccination area, and wound treatment area was 66.00%, 54.00% and 52.00%, respectively. The proportion of using uniform identification is 30.00%, 32.00% and 40.00%, respectively, and even 52.00% of the three outpatient functional areas have no unified identification, Table 1.

Table 1. Functional Zoning and Unified Identification Setting of Rabies Exposure Treatment Clinics at all Levels (%)

Type	Sectorization			Unified logo		
	Municipal level or above(n=5)	the county level(n=12)	Township level(n=33)	Municipal level or above(n=5)	the county level(n=12)	Township level(n=33)
Receive the observation area	20.00	66.67	33.33	80.00	50.00	15.15
Vaccine storage area	20.00	75.00	33.33	80.00	41.67	21.21
Wound disposal area	100.00	83.33	54.55	100.00	50.00	39.39
There are all in area 3	80.00	50.00	24.24	80.00	33.33	15.15
No area 3	0.00	0.00	36.36	20.00	33.33	63.64

3.1.2 Wound flushing equipment
25.00% of county (district) level and 36.36% of township (community) level outpatient clinics have no cold and cold water supply,

and wound flushing equipment is only a single tap; even 12.12% of township (community) level outpatient clinics have no wound flushing equipment. Table 2.

Table 2. Allocation of Wound Treatment Facilities in Rabies Exposure Treatment Clinics at all Levels (%)

item	Municipal level or above(n=5)	the county level(n=12)	Township level(n=33)	summation(n=50)
Ordinary flushing equipment	100.00	91.66	69.70	80.00
Professional cleaning equipment	20.00	8.33	18.18	16.00
water heater	80.00	66.67	45.45	52.00
cleaning tank	100.00	100.00	96.67	92.00
shower	100.00	75.00	63.64	70.00
Cleaners such as soap	100.00	91.66	96.67	90.00
Effective disinfection reagent	100.00	100.00	100.00	100.00
waste receptacle	100.00	100.00	96.67	92.00
Disinfection bucket	100.00	83.33	72.73	78.00
Ultraviolet disinfection lamp	100.00	66.67	27.27	42.00

3.1.3 Vaccination materials, cold chain facilities and equipment, and vaccination allergy disposal materials.
In the township (community) level outpatient

clinics, 36.36% had no vaccination table, 3.03% had no treatment plate, and 39.39% had no passive immunization preparation. The remaining outpatient vaccination materials,

cold chain facilities and equipment, and vaccination allergy disposal materials are fully equipped.

3.2 Outpatient Management System and Outpatient Service

36.00% of the outpatient clinics have no rules and regulations, knowledge of rabies prevention and treatment procedures, 74.00% of the outpatient informed consent or registration information of rabies exposed population is not standardized, and 16.00% of the outpatient clinics have no 24-hour or holiday duty or telephone duty system.

3.3 Human Resources Allocation

All outpatient clinics have no full-time workers engaged in rabies exposure disposal, and are part-time treatment for clinicians or nurses.74.00%.

3.4 Payment Situation of Medical Insurance

The use costs of passive immunization preparations are not reimbursed. The cost of rabies vaccine includes the outpatient service of medical insurance accounts for 70.00%.

3.5 Exposure Treatment of Rabies

The average exposure volume was 187 patients / month or above county level; 87 patients / month at township level. The average injection rate of rabies passive immunization in exposed patients was 45.94% respectively; 33.41% at county (district) level and 21.78% at township (community) level

3.6 Factors Affecting the Standardized Construction of Rabies Clinic

In order to understand the influencing factors of the standardized construction of rabies clinic, in-depth interviews were conducted with all the institutional heads of the survey clinics, and the results are as follows:

Among the influencing factors of uneven functional zoning and wound washing facilities, capital investment accounted for 100.00%, insufficient business housing vs. 84.36%, and 75.00%. Among the factors affecting the injection rate of passive immunization in exposed patients, the price of passive immunization accounted for 100.00%, the amount of outpatient exposure accounted for 69.23%, and the use of exposed immunization accounted for 23.08%. Among

the influencing factors of rules and regulations, 88.89% of leaders do not pay attention to, and no hanging space accounted for 22.22%. Among the factors affecting the non-standard filling of informed consent or registration records and the standardized disposal of knowledge after exposure, 94.59% of medical staff took it as a formalized process or paid more attention to clinical work, 90.42% had insufficient disposal personnel or insufficient training, and 70.00%.

4. Discussion

Rabies can be prevented and controlled, the case fatality rate is nearly 100% of the acute infectious disease [1], people are bitten by animals carrying rabies virus, timely and effective post-exposure treatment is the only effective means to prevent rabies [2]. As the main place for post-exposure prevention and treatment, scientific and standardized setting and management can provide good objective conditions and guarantee for timely and effective post-exposure disposal. In 2013, the former Health Department of Guizhou Province issued a document requiring the standardized construction for rabies exposure disposal clinic.

This survey showed that the outpatient coverage of rabies exposure disposal was 78.13% with low coverage which was similar to the research results of Wang et al. in 2013 and Sui et al in 2017 [3, 4]. Incomplete differentiation of outpatient functional areas. Setting up functional zoning, especially for outpatient clinics with a large amount of exposure visits, a complete functional zoning can effectively improve the quality and efficiency of standardized treatment after exposure.

The research results of Wang et al in 2010 showed that without cleaning the wound after rabies exposure will cause the virus remaining in the wound, increase the chance of the virus entering the peripheral nerve and the risk of disease [5]. Reasonably invest the construction of exposure disposal clinic, and configure wound washing facilities to meet the hardware supply of wound washing.

Whether the managers pay attention to the system is the main reason affecting the improvement of the system construction, and believe that the informed consent form or registration record is a formal process, or the

busy work of medical staff or the large amount of exposure is the main reason affecting the filling standard of the informed consent form or registration record. CDC at all levels should strengthen training and technical supervision to make exposure disposal medical staff realize the importance and necessity of informed consent and registration records of exposed population, and improve the standardization of exposure disposal outpatient work.

Rabies vaccine has been included in the new rural cooperative medical care system, indirectly encouraging dog injury exposed patients to actively take post-exposure prophylactic treatment measures [6, 7]. The injection rate of rabies passive immunization in township (community) level outpatient patients was lower than the provincial level [8]. The use of passive immunization preparation is expensive but not reimbursed by medical insurance / new rural cooperative medical system, which cannot be accepted by the public, but the number of its use is limited. In 2008, Guizhou province included passive immunization preparations in the new rural cooperative medical drug list. And this survey found that all exposure disposal clinics used passive immunization preparations at their own expense. Therefore, to strengthen the prevention and control of rabies in Guizhou Province, it is necessary to introduce the relevant policy of funding subsidy for passive immunization preparations for grade exposed [8].

The large mobility of medical staff, the loss of staff, the insufficient training, and the clinical focus of outpatient work are the factors affecting the standard exposure treatment of medical staff. To improve the awareness of prevention and treatment after rabies exposure, strengthen the training of medical staff and strengthen the ability of self-study knowledge of exposure disposal.

5. Conclusions

Most of the rabies exposure treatment clinics in Guizhou Province have not reached the standardized construction, which is mainly manifested in the incomplete functional zoning, incomplete wound treatment facilities and equipment, and imperfect outpatient system. In accordance with the requirements of the

standardized construction of rabies exposure treatment clinics, attention should be paid to and appropriately increased capital investment, functional area planning should be adjusted, complete exposure treatment wound irrigation facilities and equipment, outpatient system management should be emphasized, and medical staff should be strengthened to standardize the treatment of rabies after exposure.

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