

# Study on the Status and Influencing Factors of First Aid Knowledge and Skills of Community Residents

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**Abstract:** To analyze the current situation of first aid knowledge and skills of community residents in Yibin City and related influencing factors, and to explore effective ways to improve the knowledge and skills of community residents in Yibin City. A questionnaire survey was conducted with a convenience sample of 589 community residents in Yibin city. The first aid questionnaire designed by Li Li was used to investigate the knowledge of seven aspects, including first aid telephone, cardiac and respiratory arrest, trauma, accidental injury, common emergencies and other first aid. The score of first aid knowledge was  $(35.2 \pm 6.9)$ , and the pass rate was 72.84%. It was found that there were statistical differences in the total pass rate of first aid knowledge and skills among community residents with different genders, ages, occupations, training experiences, and text studies, but there was no statistical difference in the total pass rate of first aid knowledge and skills among community residents with different health conditions and different first aid experiences. Community residents who were female, 18-25 years old, medical personnel/medical students, had training experience, and had obtained a first aid certificate had the highest pass rates and the best first aid knowledge and skills.

**Keywords:** First Aid Knowledge and Skills; Cardiopulmonary Resuscitation; Knowledge of First Aid

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## 1. Background

In recent years, frequent disasters and accidents have posed great challenges to people's lives and health. Under such circumstances, the traditional in-hospital emergency mode has been unable to meet the emergency needs brought by unexpected events <sup>[1]</sup>. Correct, timely and effective pre-hospital emergency care is the key to improving the success rate of resuscitation and reducing the mortality and disability rates <sup>[2]</sup>. The construction and reform of China's emergency system has gradually changed from traditional in-hospital emergency care to pre-hospital emergency care, and rescuers have changed from professional first responders to "first witnesses". In this paper, the current situation of emergency knowledge and professional emergency skills of Yibin residents is studied, and relevant influencing factors are analyzed, so as to grasp and take relevant measures to improve the level of emergency knowledge and ability of residents.

## 2. Methods

In July, 2022, 605 community residents were selected from Yibin City to conduct on-the-spot questionnaire survey on first aid knowledge and skills. Inclusion criteria: (1) Community residents aged 18 and above; (2) Living in Yibin City for at least three months; (3) Ability to listen, speak, read and write. Exclusion criteria: (1) under 18 years old; (2) Living for less than three months; (3) Unwilling to be investigated; (4) Community residents with difficulties in listening, speaking, reading and writing, and mental disorders. A total of 605 questionnaires were distributed, and 589 were effectively recovered, with an effective recovery rate of 97.36%.

Using the questionnaire compiled by Li Li <sup>[3]</sup>, Including emergency telephone (telephone number), first aid for cardiac

and respiratory arrest (cardiopulmonary resuscitation), first aid for trauma (poisoning, bandaging, fixation and handling), first aid for accidental injuries (poisoning, electric shock, drowning, burns, heatstroke, bite, sprain and trampling), first aid for common emergencies (airway foreign body, stroke, convulsion, asthma, angina pectoris, nosebleed), and so on. It is divided into three grades, with a score of 40 ~ 50 as good, 30 ~ 39 as medium and 0 ~ 29 as poor. Cronbach's $\alpha$  coefficient of the questionnaire is 0.782.

SPSS23.0 statistical software was used to analyze the data. Descriptive analysis, single factor analysis and other statistical methods were used. In descriptive analysis, the mean and standard deviation are used for measurement data, and chi-square test is used in single factor analysis, with  $\alpha=0.05$  as the test level.

### 3. Results

According to the calculation, the score of community residents' first-aid knowledge is  $35.2\pm 6.9$ , and the passing rate is 72.84%. Generally speaking, this group of people has a high level of first-aid knowledge and skills, and their knowledge mastery is good. However, under different influencing factors, each group of people has different first-aid knowledge mastery. Community residents with different genders, ages, occupations, training experiences and textual research situations have statistically significant differences in the total pass rate of first aid knowledge and skills (all  $P < 0.01$ ), but community residents with different health conditions and first aid experiences have no statistically significant differences in the total pass rate of first aid knowledge and skills.

### 4. Discussion

There is a significant difference in the passing rate of the total score of on-site first aid knowledge and skills test among the respondents of different age groups ( $P < 0.01$ ), which indicates that the age factor has an impact on the level of on-site first aid knowledge and skills of Yibin community residents<sup>[4]</sup>, which is consistent with the research results of Hong Wang, etc. This result may be related to the experience, memory, life concerns and thinking tendency of people of each age group. Therefore, first aid trainers should provide different contents, ways and forms of training for different age groups in the training of on-site first aid knowledge and skills, so as to effectively improve their on-site first aid ability.

### 5. Conclusion

It is suggested that the government should put the popularization of first aid knowledge into the popular science plan, and focus on improving the popularization rate of self-help and mutual assistance. Give full play to the leading role of the government and drive the whole people to learn first aid knowledge.

Table 1 Comparison of test scores and passing rates of different age groups (n=589)

age bracket	Passed number	Number of failed students	Pass rate	Failure rate
	(n)	(n)	(%)	(%)
18~25	330	95	seventy-eight	22
26~30	19	10	66	34
31~40	20	eight	71	29
41~50	forty-four	27	62	38
51~60	14	12	54	46
More than 60	2	eight	25	80
X <sup>2</sup>		28.869		
P		<0.01		

Establish a scientific training system, incorporate first aid knowledge into school teaching content and on-the-job training content, improve people's mastery of first aid knowledge and skills, change the learning of first aid knowledge from passive to active, improve people's health awareness and rescue ability, and solve the difficult problem of "unable to save, inconvenient to save and afraid to save."

The popularization of first aid knowledge and skills has become the standard to measure the comprehensive strength of a country's society, and first aid knowledge and skills are the basic qualities that citizens should possess [5]. The results of this study show that the community residents in Yibin City have a high level of knowledge and skills in on-site first aid, with a total pass rate of 72.84%, indicating that most people have a good sense of first aid, but there are great differences among different groups.

Cardiopulmonary resuscitation (CPR) refers to the on-the-spot first-aid technology that should be applied immediately to save lives when heart disease, electric shock, drowning, poisoning, trauma and other emergencies cause the heartbeat and breathing to stop. The number of deaths due to cardiac arrest in China is about 540,000 every year, and it is increasing year by year. When cardiopulmonary resuscitation is given within 4 minutes of cardiac arrest, the success rate of resuscitation can reach about 32%, and with the delay of time, the success rate of resuscitation drops significantly [6]. In foreign developed countries, emergency medicine has developed rapidly, and the popularization of on-site cardiopulmonary resuscitation (CPR) technology has become standardized, standardized and popularized. On average, more than 2/3 adults have mastered CPR technology [7]. Compared with foreign countries, in China, the popularization of cardiopulmonary resuscitation (CPR) is a very difficult task because of the limitations of people, property and other conditions, and the difficulty of CPR itself. Many studies have shown that after cardiopulmonary resuscitation training, if it is not consolidated for a long time, it will decline with the extension of time. It is gratifying to note that some regions and fields in China have realized the importance of first aid, and carried out cardiopulmonary resuscitation training. Some regions have already carried out a training mode that relies on hospitals, radiates to the surrounding areas, takes medical staff as the center, popularizes and spreads to non-medical staff in-hospital and out-of-hospital, and at the same time pays attention to technical retraining and consolidation, so that the masses can actually master cardiopulmonary resuscitation techniques.

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