Application of Trinity Model on the First Aid in Community Residents

Zhang zhenxiang, Yang Yaping, Lin Beilei, Zhang Qiushi

Nursing College of Zhengzhou University, Zhengzhou,Henan Province,450003, China
zhangzx6666@126.com

Abstract: Purpose This study explores the effect of the first aid training model containing the Red Cross, universities and community which is used to train community residents. Method 426 residents from a selected community were extracted to be trained by the trinity first aid model. Respectively investigate their grasp of first aid knowledge before and after the training. Result Before training, the community residents' first aid knowledge score is 58.58 ± 16.56 compare to 85.13 ± 18.62 (P<0.01) after training, and the questionnaire score of the five latitude is also increased(P<0.01). About 63.2% of the residents considers that the first aid training is very good , 80.5% of residents consider the training time is appropriate, and 89.4% of residents says that learning first aid knowledge is very helpful to individuals and families.

Key words: Trinity; First Aid; Community Residents

Introduction

In daily life, people will encounter a variety of emergencies, such as traffic accidents, anthracemia, food poisoning, and other events which can cause cardiac and respiratory arrest. When the accident happens, the family members or witnesses usually will take the injured rushed to hospital. This traditional approach to save the patients often makes the injured who is dying lost the rescued opportunity of 4~6 minutes' prime time. The correct treatment in time plays an important role on the recovery of the injured. However, a survey shows that about 65.7% of community residents in certain areas of China know nothing about CPR, and the level of understanding other first aid knowledge is low too[1-2] .In order to improve the level of the first aid knowledge for community residents, this study explored a new appropriate training model which was called "trinity" between July and August 2011 in Zhengzhou, a city of Central China's Henan province. The training model of "trinity" first aid knowledge combined the advantages of excellent educational resource in university with the Red Cross' cultural characteristics of the life-saving and universities. In this way, the first aid knowledge of community residents is improved effectively, and the research is as follows.

Materials and methods
Participants

There were about four hundred and twenty-six community residents participating in the first aid knowledge and skill training program in the City of Zhengzhou. Questionnaires were given to the residents before the training to appraise the level of the basement. After training the same kind of questionnaires were given to them who attending the training to survey the

effect of the training. 426/426 questionnaires were distributed and 426/421 effective were retrieved at last. The effective rate was 100% / 98.8%. The basic informations of the residents were shown in Table 1.

Table 1. Participant (n=426/421)

	Pre-training	After training
Sex ratio	241females(56.6%) 185males(43.4%)	239females(56.8%) 182 males(43.2%)
Mean age (range)	35.12 ± 10.336 (15-68)	34.07 ± 10.327 (15-63)
Occupational	13workers(3.1%), 6 farmers (1.4%), 36 cadres (8.5%), 8 students(1.9%), 244 teachers(57.3%), 63 staff(14.8%), others 56 (13.1%).	13workers(3.1%), 6 farmers (1.4%), 36 cadres (8.6%), 8 students(1.9%), 241 teachers(57.2%), 62 staff (14.7%), others 55 (13.1%).

Methods
The training methods

The "trinity" first aid training model consists of the Red Cross, university and community. The training would last 2 hours each time. The training contents include the basic knowledge of the first aid, such as the principles of the first aid on site , cardiopulmonary resuscitation,the techniques of hemostasis, bandaging, fixation and transport the injured, and the handle knowledge of emergency which takes place commonly at home, such as fishbone card throat, bitten by dogs or cats, heart and brain disease and catastrophic events which need emergency relief immediately such as earthquakes, explosions and so on.

Assessment instruments

The current study presents a mixed method which is quantitative and qualitative way to assess the effect of the training. The quantitative questionnaire was made by researchers, and it includes two parts. The first part is the general demographic information for residents, including gender, age, occupation, etc. The second part is the first aid knowledge questionnaire which consists of 39 items, five dimensions. Each items is measured on a 4-point Likert scale ranging from 1"I know nothing", to 4 "I master it". The same questionnaire would be used after training to evaluate the residents' mastery degree of the first aid knowledge. Another questionnaire which was used to evaluate the training effectiveness was distributed meanwhile. All questionnaires were filled out in the anonymous and self-administered way. The residents who can't fill out the questionnaire by himself would be read and explained by the investigator. They would choose the right answers, according to the reaction of residents.

Semi-structured interviews were hold on with residents who participated in the training. After training, community workers and residents will receive on-site interviews. The semi-structure interview outline was developed by the Nursing College of Zhengzhou University. The interview Materials would be recorded and sorted by special man.

Quality Control

In this study, the model was demonstrated repeatedly before the training. Pretest was carried out twice to improve the training program and to evaluate the adaptation of the questionnaire. In order to ensure the consistency of the raining content , the assessors, teachers and investigators would get training in advance. On-site supervision was used to control the quality of training, and the questionnaires were recovered at the site.

Data collection and analysis

The Statistical software SPSS13.0 was used to analyse data. In order to reduce data entry errors, data was entered to the software by two persons, and the questionnaire which was unqualified would be eliminated in time. Count data was described by rate / percentage, and measurement data was described by mean / standard deviation. The differences between pre-training and after training were checked with Paired T test.

Results
The comparison of mastery degree for first aid knowledge before and after the training

After training the total score of the Residents' first aid knowledge had a significant increase. There was significant difference compared to pre-training.($P < 0.01$) (Table 2). There was significant difference for the score of every dimensions compared to pre-training ($P < 0.01$) (see Table 3).

Table 2. The Comparison of the total scores of the first aid knowledge to the residents in the city of Zhengzhou ($\overline{X} \pm S$)

	Score	t	P
Pre-training	56.58 ± 14.56	23.09	<0.01
After raining	84.99 ± 18.62		

Table 3. The Comparison of the scores of the different first aid knowledge to the residents in the city of Zhengzhou ($\overline{X} \pm S$)

Training Contents	Pre-training	After training	t	P
Basic Knowledge	8.35 ± 2.10	12.42 ± 3.37	13.89	<0.01
CPR Knowledge	5.74 ± 1.98	8.29 ± 2.08	10.67	<0.01
Wound management	9.87 ± 2.96	14.23 ± 3.51	15.76	<0.01
Home first-aid Knowledge	18.68 ± 3.12	26.08 ± 6.58	16.25	<0.01
Catastrophe management	13.46 ± 4.99	19.20 ± 5.03	15.98	<0.01

The residents' view of the training

The overall views of the community residents who participate in the training activities are as follows. 63.2% of the residents thought the training program was best, 19.7% of residents considered better, and 13.6% of residents thought it general; 3.8% of the residents thought that the training time is too long, 80.5% thought it was appropriate, while 15.1% residents believed that too short; In addition, 89.4% of residents considered that learn first aid knowledge was helpful to himself and families and 9.6% considered with a little help, only 0.9% considered no help.

Qualitative evaluation

After training, we had a conversation with the community workers. They were satisfied with the training. They thought that the form of training was standardized and innovative, the contents were very enriched and practical. The teacher could integrate theory with practice which made the contents were

more easy to understand. The teachers' attitude was serious and responsible and they had higher level for teaching. Many residents of the community said they had never took part in first aid training like this before, so they had higher enthusiasm for the training. Some training contents were very important to their daily life, such as cardiopulmonary resuscitation. So they look forward to the next deeper level training, for that when his family member or others get injured they could do something correct before the emergency staff reached. If they could do that the rate of the occurrence for undesirable consequences may be reduced.

Discussion
The feasibility of first aid training

The first aid is an important part for emergency defense function for every city, and it is also a sign of the degree of social civilization . There are some successful emergency trainings which are widely applied to help the community residents abroad, and the training content and depth are professional[3]. Judging from the situation of the training site, the knowledge of first aid training are very popular with community residents in our city, and this may be related to the development of our economy, society culture, and the knowledge of first residents. The general requirements of the knowledge for residents is increasing, so the requirements of safety is more and more important.

Training effect

The improvement of first aid knowledge for community is depended on the high quality training system. The level of the residents' knowledge for first aid is improved significantly after the training which is named "trinity" model to the community(Table 2). Compared to pre-training the mastery of first aid knowledge is increased significantly. All those who take part in the training program expressed (Table3). 68% of the residents consider that the difficulty of the training is moderate, and the content set is reasonable. In addition, the teachers who are involved in this training activities have abundant clinical and teaching experience, could master the degree of difficulty and take full advantage of the teaching skill.

The training model is reasonable

The Red Cross is the organizer of the first aid scene, the main force to carry out the general education. It rely mainly on social donations, state subsidies and other forms to raise funds to work, which have double difficult issues on implementation and funding. The community health care workers are rooted in the community, and the main force of the medical knowledge education, but studies have shown that 92% of community health care workers have not received

first aid training [4]. They need first aid training for the reasons of lacking clinical experience, theoretical knowledge and knowledge aging. So they lack the ability of taking up first aid training for community residents. For this training program, which is organized by the Red Cross, based on community, the colleges and excellent teachers. The team had better basic training and scientific research funds which can support the emergency training work. For this model, we can make full use of the existing emergency network, and it can not only compensate for the shortage of community staff in first aid knowledge and skills, but also can carry forward the spirit of the Red Cross' life-saving. In this way the first aid knowledge could be transited to the community residents effectively.

Training should be strengthened

After training the mastery degree of the knowledge for community residents has greatly improved, but some of the contents still need to be improved, for example the cardiopulmonary resuscitation. Cardiopulmonary resuscitation is an important skill of first aid which every citizen should master it. Residents said that cardiopulmonary resuscitation played an important role on the emergency treatment for the man who was injured. They also look forward to the next training because they can't seize the core essentials of the technology only by one training. A great deal of specialized research had been carried out to find out the best training method and the effect of long-term application by foreign researchers[5-6]. Because of time constraints, this training program was carried out only once, and the survey of the master degree the training was completed only once too. We could not detect the long-term effects, however oblivion takes place immediately after learning [7]. The oblivion will become more prominent to community residents who had no medical knowledge background. Therefore, how to guarantee the long-term effects of first aid knowledge and skills will become the next research focus.

Summary

With the continued development of the economy, the rhythm of people's daily life becomes faster and faster, the requirements of safety is also increasing rapidly meanwhile. Because of the convenient and efficient transport in our daily life, it is not the responsibility of an individual or a hospital to protect the individual safely, your family safely, and improve the safety of whole society. It is a dynamic, continuing acts of individuals, families and society, and it is the responsibility of the whole society. Time is life, if the first witnesses of the scene can choose the effective first aid for the injured, the pain and

further damage of the injured will be reduced, even the further diagnosis and treatment chance will be created. Therefore, exploring effective training methods and content for community residents is a strong guarantee for improving the efficiency of first aid , adopting effective on-site first aid treatment, and improving the success rate. It lays a certain foundation for exploring a long-term oriented and systematic training by this first aid training.

Corresponding Author:
Professor Zhang Zhenxiang
Nursing College of Zhengzhou University, Zhengzhou, Henan Province,450003, China
E-mail: zhangzx6666@126.com

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