

Effectiveness Analysis of Earthquake Emergency Plan Implementation in College and University

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Keywords: Effectiveness, Earthquake Emergency Plan (EEP), College and University, Practice of Earthquake Emergency Response

Abstract. Earthquake emergency plan (EEP) is one of effective approach to overall strengthen the ability to earthquake disasters reduction. Colleges and universities (C&U) where locate in Beijing region are one of the main body of earthquake preparedness and disaster reduction work. The paper designed to questionnaire to test effectiveness of EEP implementation. The investigation was taken random in different of C&U campus. The effect of EEP learning and practice learning by contrastive analyses. Different school has different practice. So, every kind C&U should take different way to practice plan.

Introduction

As a guidance document, Earthquake emergency plan (EEP) actually is the basement of seismic emergency (Chinese EEP, 2012). At the same time, EEP is one of effective approach to overall strengthen the ability to prevent earthquake disasters, which not only stick to the focus on prevention, combination of prevention, resistance and relief and sticks to the unification of normal disaster reduction and emergency disaster relief, but also shifts attention from post-earthquake assistance to pre-earthquake prevention.

Schools are the main body of earthquake preparedness and disaster reduction work. The earthquake emergency plan has been promoted to the law level in schools [1]. Implementation on July 1 in 1986 of compulsory education law of the People's Republic of China, Art.24: school should build and improve the security institutions and emergency mechanism, which effectively prevent the occurrence of accidents [2]. Colleges and universities (C&U) are the potential talents training base. In the meantime, they are also specific geographical areas of the future economic development resources and driving force. For talent high density and concentration, it would makes heavy loss, once earthquake or other disasters break out. Therefore, it is one of important to test the effectiveness of EEP implementation.

Study Area and Data Sources

Study Area

The Beijing Region is Made Study Area

Beijing is the capital of the People's Republic of China. At the same time, it is the world-famous historical ancient city and well-known city of culture. C&U, which located Beijing region, have important influence to domestic politics, culture and international communication.

Colleges and Universities Classification

Different C&U has different objective of talents cultivation. Difference is obvious among C&U. C&U are made classifications in accordance with the students' educational goals. There are five kinds.

The first is 985 universities (Abbr. 985) 985 universities are the universities of "985 Project", which expect most students not only to be known in the academic world as a leader but also to gather innovation team and cultivate of innovative talents.

The second is 211 C&U (Abbr. 211). 211 C&U are the "211 Project" construction institutions. The Chinese government focuses on the central and local forces to be on the construction of 100 or so universities and a number of key disciplines and specialties. The goal is that enable them to reach the level of world-class university. In order to avoid data duplication, the 211 universities in this paper do not include universities that have been selected for the "985 project" .

The third is general C&U (Abbr. G). General C&U are the institutions of higher learning outside the 985 and 211 C&U.

The fourth is junior C&U (Abbr. J). Junior C&U are general professional training education.

The fifth is civilian-run C&U (Abbr. C). Civilian-run C&U are managed by the institutions or individuals outside the state departments.

Data Sources

After the EEP worked out, effectiveness needs to practice to test. By practice, the problems are found and solved. The research include EEP learning and EEP practice learning [3], shown in table 1.

Table 1, The contents of questionnaire investigation

No.	Questions	Contents
1	earthquake experiences	
2	The reaching level of earthquake prevention and disaster reduction	The effect of EEP learning
3	The necessity of EEP making in colleges and universities	
4	The necessity of EEP practice in colleges and universities	The effect of EEP practice learning
5	The attitude to EEP practice	
6	The effect of EEP practice	

For ensure effectiveness, the investigation were taken random in campus. First students filled out the questionnaire to avoid other staff disturbance. If student had question to questionnaire, investigator need to explain related. Second, gender was been distinguished. Male and female have gender differences. That is, they have possible different cognition to plan.

Survey results showed the qualified rate of all samples was 97.4%. Male: female=0.96. The results could basically meet the study demands.

Comparative Analysis

Earthquake Experience

Among respondents, the result of experienced earthquake is shown in the Fig. 1.

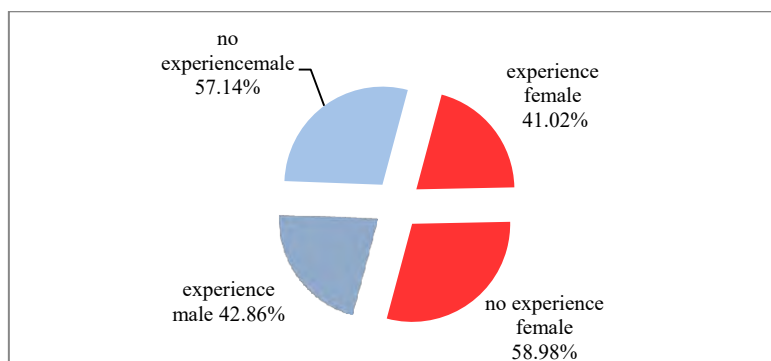


Fig. 1, Diagram of student which experienced earthquake

In Figure 1, the students of experience are fewer than the students of no experience. Among the ratio of experienced male is 42.86% and the ratio of experienced female is 41.02%. Earthquakes are

a common natural phenomenon. However, earthquake which broke is especially seriously very few. It is reasonable that the ratio about 50%.

The Effect of EEP learning

Data comparative analyses are analyzing optimal option of every question. The results are gotten by the ratio which the number of selected optimal option compare the total number.

Whether Reached the Goad of Earthquake Prevention and Disaster Reduction According EEP?

The goad of EEP is earthquake prevention and disaster reduction. The ratio which plan reached the goal is shown in the Fig. 2.

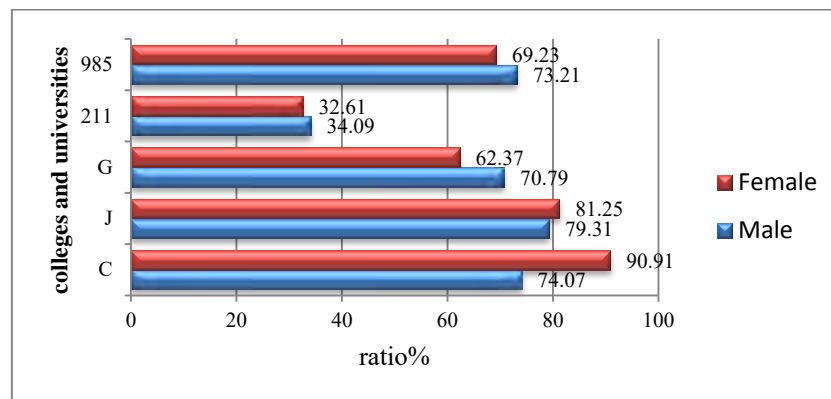


Fig. 2, The ratio diagram of EEP reached the goal

In Figure 2:

- (1) 211 C&U are the lowest ratio no matter gender. The ration is about one third.
- (2) Female is greater than male in junior and civilian-run C&U. While male is greater than male in 985 C&U, 211 C&Us and general C&U. It shows that gender difference lies in the EEP reaching the goal.
- (3) Except 211 C&U, the male ratio are very closely and are 74.07%, 79.31%, 70.79%, 73.21%; The female ration are distinctions and are 90.91%, 81.25%, 62.73% and 69.23%. By compared Fig.1, every ratio is greater than 50%. We know that many students who didn't experienced earthquake agree EEP to reach the goal of earthquake prevention and disaster reduction.

Whether Need to Make EEP in Colleges and Universities?

The ratio of making EEP need is shown in the Fig.3

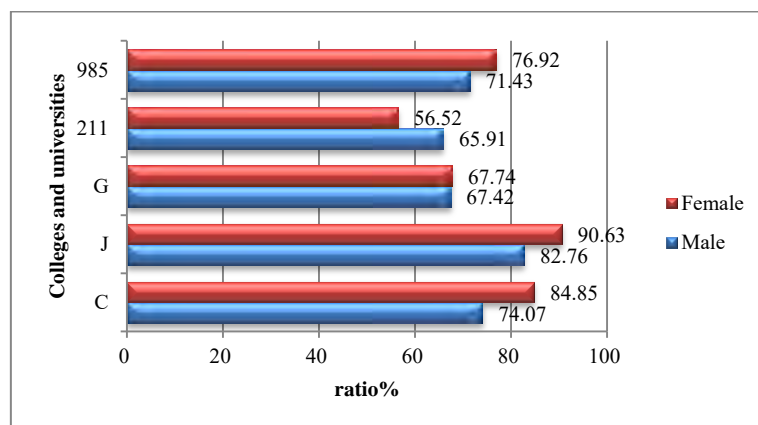


Fig. 3, The ratio diagram about the necessity of EEP made

In Figure 3:

- (1) The ratio between 56.52% and 90.63%. In other words, more than half students think it is necessary that EEP is made in C&U.
- (2) The lowest ratio is 211 C&U no matter gender.
- (3) The highest ratio is junior colleges no matter gender.
- (4) Except 211 C&U, the female ratio is higher than male, which testify female more emphasize EEP.

A lot of cases, for example Sanza middle school in Wenchuan Earthquake in 2008, prove that earthquake loss could have been decreased effectively by making EEP. In fact, by web searching in school official website, only Beijing Jiaotong University made EEP of all 91 C&U in Beijing.

The Effect of EEP Practice Learning

According to the national preparatory plan for earthquake emergency (revised in 2012), schools should carry out EEP with reality. Only according to practice, it could be found the maneuverability of the existing EEP, as well as whether accords with the realities. Further, practice is important ways to efficiency improvements emergency plan.

Whether Has EEP Practice the Necessity in Colleges and Universities?

The ratio of EEP practicing the necessity is shown in the Fig.4

In Figure 4:

- (1) The lowest ratio is 211 C&U no matter gender.
- (2) Except civilian-run college, the female ratio is higher than male, which testify female more emphasize EEP practice.

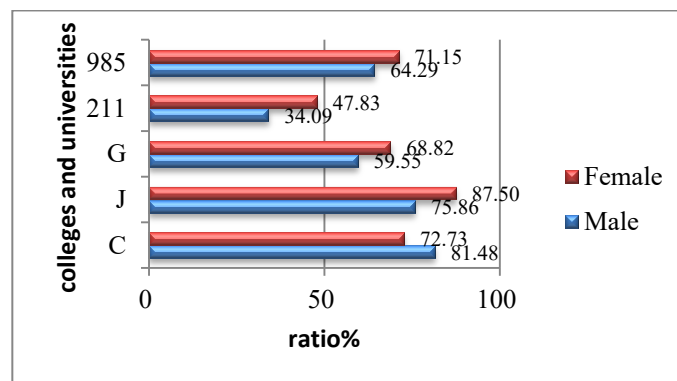


Fig. 4, The ratio diagram of the necessary of EEP practice

How Did Your Attitude to EEP Practice?

The question has 5 options, which is the most among questions. The ratio of options is shown Fig. 5.

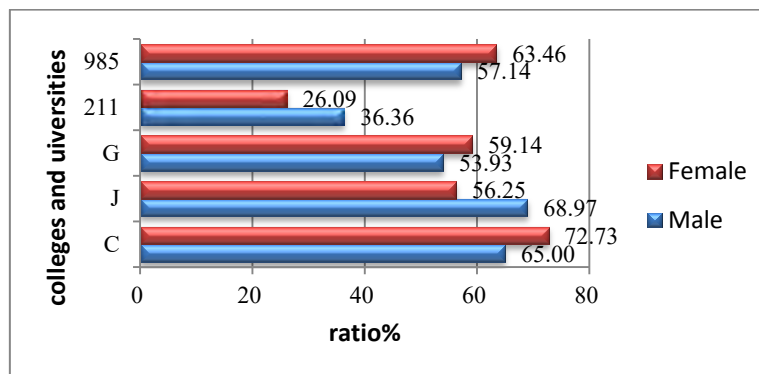


Fig. 5, The ratio diagram of the attitude of EEP practice

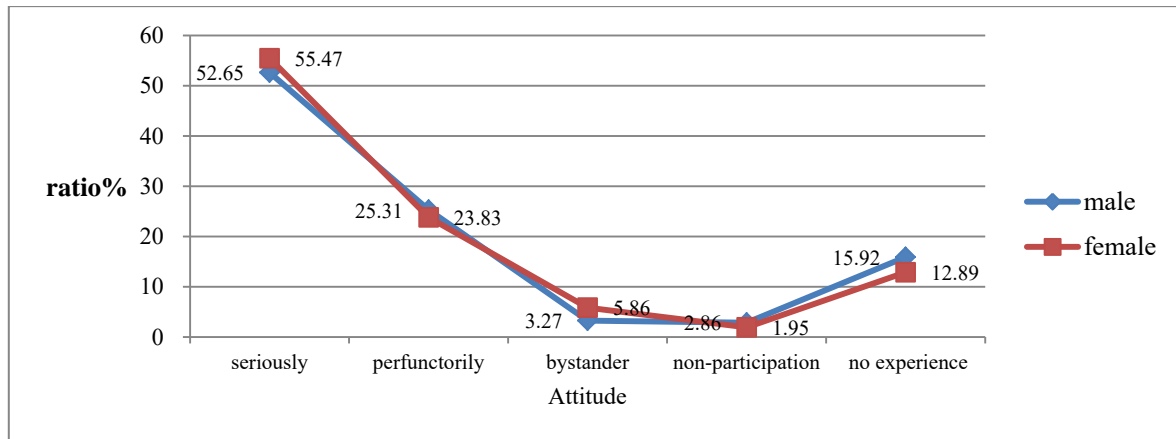


Fig. 6, The ratio diagram of seriously practice

"Seriously" options have half of students and are very little. Analyses in detail are shown in the Fig. 6. "No experience" option has higher ratio. Beijing is the capital of China and has special important position. By investigation, 15.92% male and 12.89% female have no experience. The ratio related higher.

In Figure 6:

- (1) Except 211C&U, other C&U exceed 50%. It testifies 211 C&U too low, which take down the ratio.
- (2) Female is greater than male in 985 universities, general C&U and civilian-run C&U. While male is greater than male in 211 C&U and junior C&U.

How Did the Effect of EEP Practice?

The optimal option is "Good effect". The ratio is shown in the Fig.7.

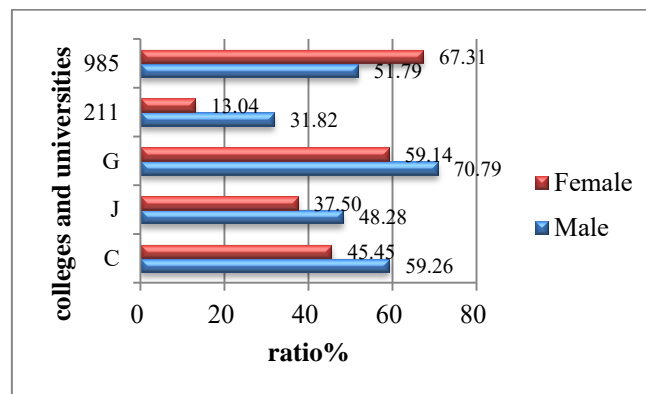


Fig. 7, The ratio diagram of thinking good effect

In Figure 7:

- (1) The lowest ratio is 211 C&U no matter gender.
- (2) Except 985 C&U, the male ratio is higher than female, which testify male more gains by EEP practice. Male take less attention to the necessary of plan, on the contrary, they take more attention to EEP practice.

Summary

According to the analyses, different school has different practice. So, every kind school needs take different way to practice plan.

Acknowledgement

This research was financially supported by the Hebei Social Science Fund (HB18GL004).

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