

Research on Emergency Management System of Universities Based on the Perspective of PPRR Theory

--Taking Some Colleges and Universities in Southern Zhejiang as an Example

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Abstract. At present, the whole campus environment and safety and stability situation of China's colleges and universities is good, but the problems and hidden dangers affecting the safety and stability of colleges and universities still exist, so the research on emergency management of college emergencies has great practical significance. This paper focuses on the construction of emergency management system in colleges and universities, and adopts the questionnaire survey research method to analyze the problems of emergency plan construction and implementation in some colleges and universities in Zhejiang. To propose countermeasures and suggestions on how to further strengthen the establishment of a high-level emergency plan system in Zhejiang universities, so as to provide effective reference for the construction of emergency plans in other universities in China.

Keywords: College emergencies; College safety; Emergency management.

1. Introduction

Facing the complex and ever-changing international and social environment, rapidly changing information technology, and colliding and stirring multiculturalism, the construction of emergency management mechanism of university emergencies faces great opportunities and challenges. Students' behavioral and psychological problems, teaching management accidents, logistic management accidents, teacher-student conflicts and ineffective school management measures may all lead to emergencies in colleges and universities. Colleges and universities must learn how to face various emergencies, prevent and reduce the harm and impact caused by college crisis events to the greatest extent, and ensure that colleges and universities maintain safety and stability and achieve sustainable development in the midst of fierce competition. Therefore, how to effectively prevent and efficiently and orderly respond to emergencies is still a difficult problem that needs to be solved and deepened in colleges and universities.

2. Basic concepts

According to the definition of the People's Republic of China Emergency Response Law, emergencies, refers to the sudden occurrence of natural disasters, accidents and disasters, public health events and social security events that cause or may cause serious social harm and require emergency response measures to be taken.

Colleges and universities emergencies mainly refer to events that are not transferred by others' will, triggered by natural, man-made, social and economic factors, and have a sudden impact or harm inside or outside the college, which will cause a certain impact on the normal teaching, management and social image of the college.

Emergency management refers to a series of government initiatives to respond to public emergencies, including prevention, preparedness, response, recovery, reconstruction, initiatives and legislation, with the aim of reducing casualties, minimizing property damage, controlling the extent of damage, and ending the emergency and returning to normal conditions as quickly and cheaply as possible.

Based on the understanding of emergency management, emergency management in colleges and universities refers to the management process that the relevant management agencies and managers of colleges and universities, in the face of possible or existing emergencies, quickly make decisions and take a series of necessary measures to effectively prevent, handle and recover from emergencies in colleges and universities to avoid or reduce the damage caused by emergencies to schools.

3. Basic theory

PPRR emergency management theory divides emergency management into four phases:

Prevention: The first and foremost task of emergency management is to prevent the occurrence of crisis events, eliminate any possible factors leading to the outbreak of crisis, prevent the crisis before it happens, and take timely measures to solve the crisis by analyzing the outbreak factors to avoid the occurrence of crisis.

Pre-crisis preparation: On the one hand, we need to develop contingency plans. The way of possible crisis, the scale, the upcoming problems, etc. are envisioned, and several sets of contingency plans are prepared. On the other hand, establish a crisis early warning mechanism, including setting up the organizational structure of the early warning system and establishing an information monitoring and collection mechanism in two aspects.

Response when crisis breaks out: According to the emergency management plan formulated in advance, we will carry out emergency treatment when crisis breaks out, and contain or deal with the crisis in a timely and effective manner. At this stage, a very complex situation was faced, requiring the necessary measures to be taken in a very difficult situation, applying a variety of tools to bring the crisis to an end.

Post-event recovery: After the crisis is over, recovery or reconstruction work should be done. Recovery and reconstruction not only include the recovery of things, but also focus on the recovery of human spirit, scientific summary of the whole process of crisis events, learn lessons, make up for loopholes, improve the emergency plan again, and improve the institutionalization and legalization of emergency handling.

Later, the U.S. Federal Security Management Council amended it: Mitigation, Preparation, Response, Recovery, so also known as the "MPRR" model. After September 11, 2001, in response to the threat of terrorism, the U.S. emergency management cycle added "prevention", focuses on predictable crises, and mitigation, which focuses on measures to limit the impact of unpreventable crises.

4. Research design

4.1 Purpose and method of investigation

The purpose of conducting this survey is to comprehensively understand the current situation of campus emergency management of colleges and universities in southern Zhejiang through an empirical study, which is carried out by means of a questionnaire survey.

4.2 Selection of survey subjects

The main subjects of this study are three public undergraduate colleges and universities, two private independent colleges, three public senior high schools and one private senior high school in southern Zhejiang, which represent the situation of schools in southern Zhejiang from different levels. The sample is selected to be representative.

4.3 Analysis of survey results

The research started from May 2021 and ended in May 2022. The field research was adopted, 1000 questionnaires were distributed to students studying in universities in southern Zhejiang, and 968 questionnaires were actually collected, of which 852 were valid, with an efficiency rate of 85.2%. The statistical results of the questionnaire survey are as follows.

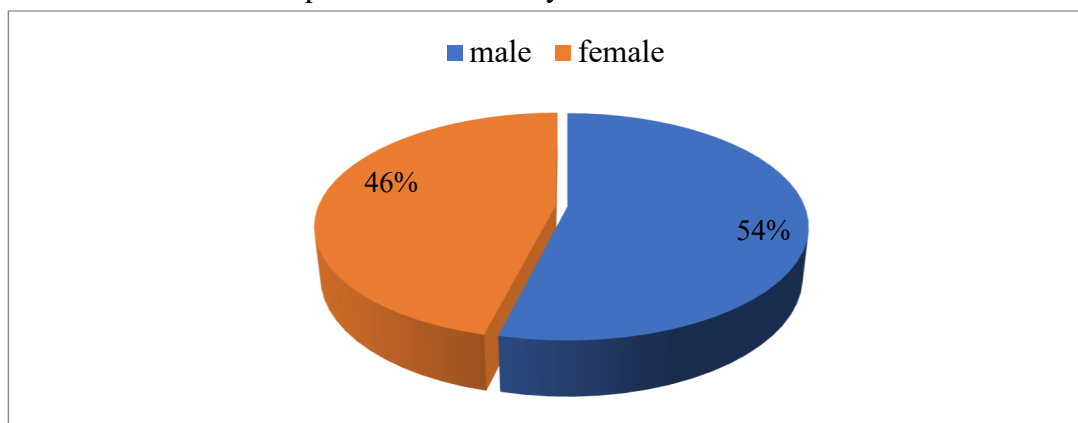


Figure 1. Gender distribution of current students

Table 1. Gender distribution of current students

Gender	Sample size	Sample ratio
male	459	53.87%
female	393	46.13%

From Figure 1 and Table 1, it can be seen that 459 male students participated in this questionnaire, accounting for 53.87% of the total number of students surveyed, and 393 female students, accounting for 46.13% of the total number of students surveyed.

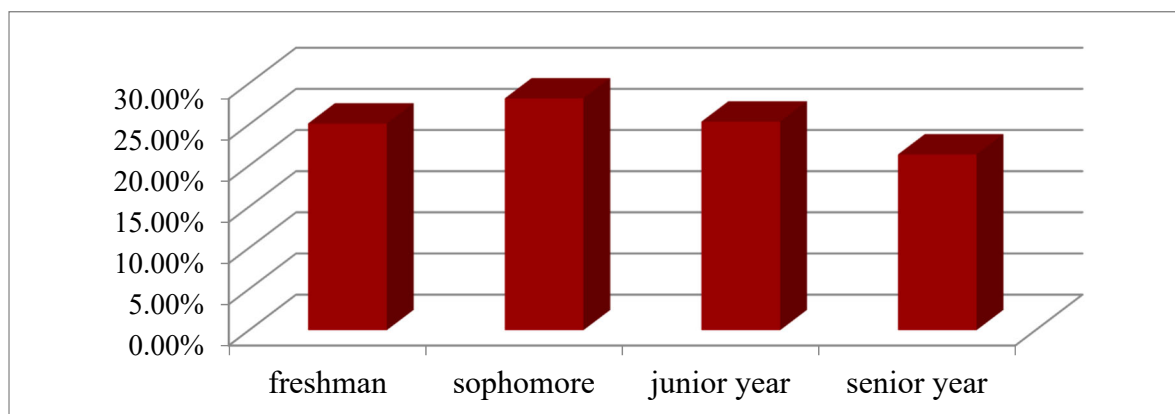


Figure 2. Grade distribution of current students

Table 2. Grade distribution of current students

Grade	Sample size	Sample ratio
freshman	214	25.12%
sophomore	240	28.17%
junior year	216	25.35%
senior year	182	21.36%

From Figure 2 and Table 2, we can see that the grade distribution of the students who participated in this questionnaire is as follows: 214 first-year students, accounting for 25.12% of the total number of respondents, 240 second-year students, accounting for 28.17% of the total number of respondents,

216 third-year students, accounting for 25.35% of the total number of respondents, and 182 fourth-year students, accounting for 21.36% of the total number of respondents. 21.36%.

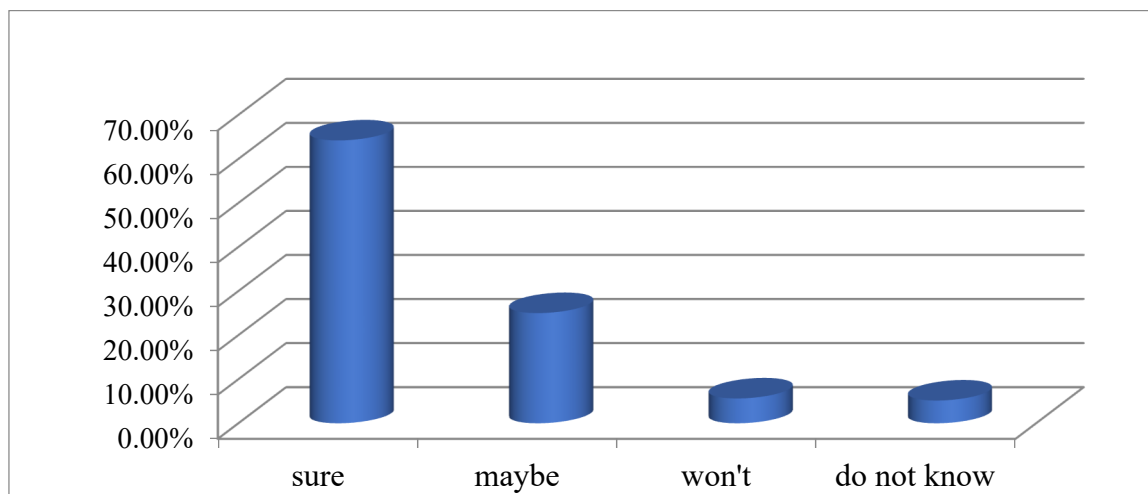


Figure 3. Do you think emergencies will happen at your school?

Table 3. Do you think emergencies will happen at your school?

Do you think emergencies will happen at your school?	Number of people	Proportion
meeting	547	64.20%
maybe	213	25.00%
won't	48	5.63%
do not know	44	5.16%

When asked, "Do you think an emergency will happen in your school?" From Figure 3 and Table 3, we can learn that 547 students (64.20%) think it will happen; 213 students (25.00%) think it may happen; 48 students (5.63%) think it will not happen; 44 students (5.16%) do not know.

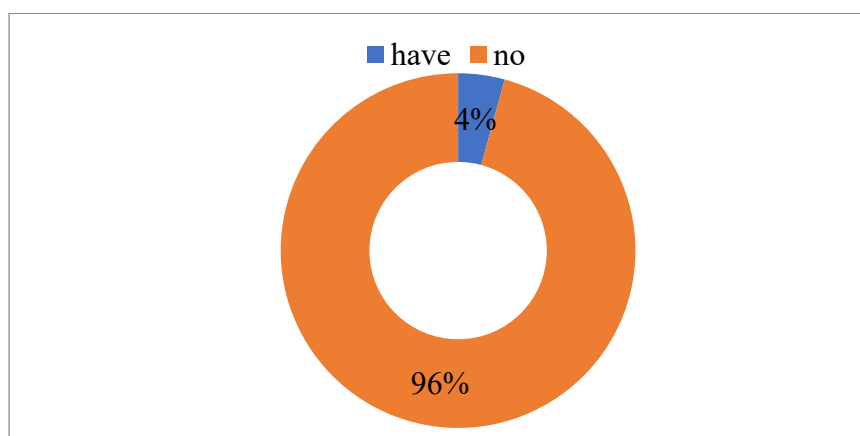


Figure 4. Have you encountered personal injury, fire, fire, theft, traffic accident and other emergencies?

Table 4. Have you encountered personal injury, fire, fire, theft, traffic accident and other emergencies?

Have you encountered personal injury, fire, fire alarm, theft, traffic accident and other emergencies?	Number of people	Proportion
have	36	4.23%
no	816	95.77%

As shown in Figure 4 and Table 4, when students were asked, "Have you ever encountered any personal injury, fire, theft, traffic accident etc.?" 36 students answered "yes", accounting for 4.23%; 816 students answered "no", accounting for 95.77%.

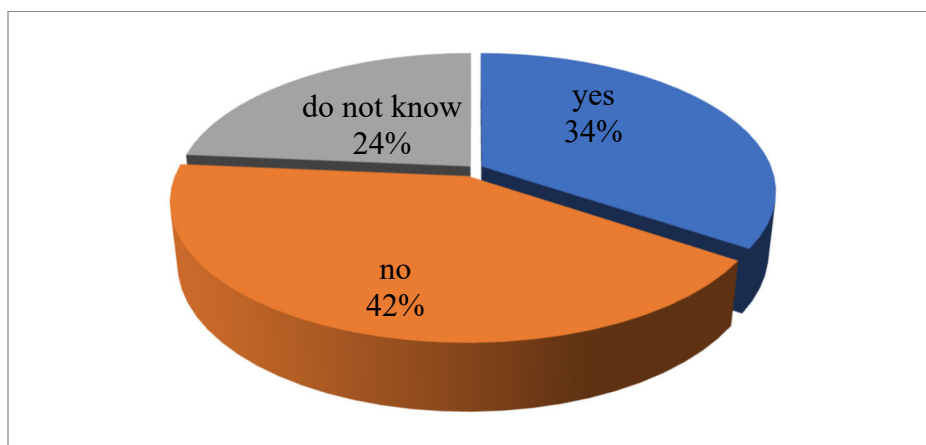


Figure 5. Are you prepared for emergencies?

Table 5. Are you prepared for emergencies?

Are you prepared for emergencies?	Number of people	Proportion
yes	293	34.39%
no	358	42.02%
do not know	201	23.59%

When asked, "Are you prepared to deal with emergencies?" From Figure 5 and Table 5, 293 people, or 34.39% of the total number of students surveyed, thought they were prepared for emergencies; 358 people, or 42.02% of the total number of students surveyed, thought they were not prepared for emergencies; and 201 people, or 23.59% of the total number of students surveyed, thought they did not know. The total number of students surveyed was 23.59%.

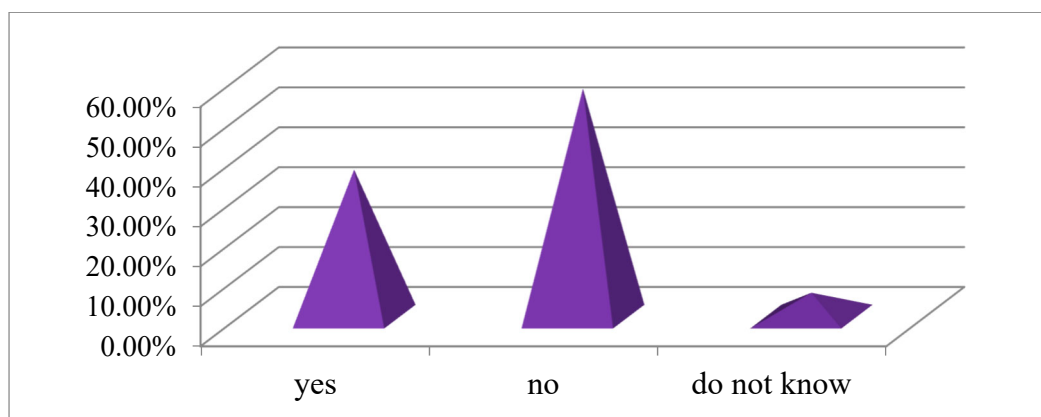


Figure 6. When you encounter an emergency, do you feel that you have the confidence to deal with it?

Table 6. When you encounter an emergency, do you feel that you have the confidence to deal with it?

When you encounter an emergency, do you feel that you have the confidence to deal with it?	Number of people	Proportion
yes	314	36.85%
no	487	57.16%
do not know	51	5.99%

When asked, "When you encounter an emergency, do you think you have confidence in dealing with it?" Figure 6 and Table 6 show us that the number of students who felt "confident" was 314, accounting for 36.85%; the number of students who felt "not confident" was 487, accounting for 57.16%; and only 51 students "don't know", accounting for 5.99%. Only 51 students "don't know", accounting for 5.99%.

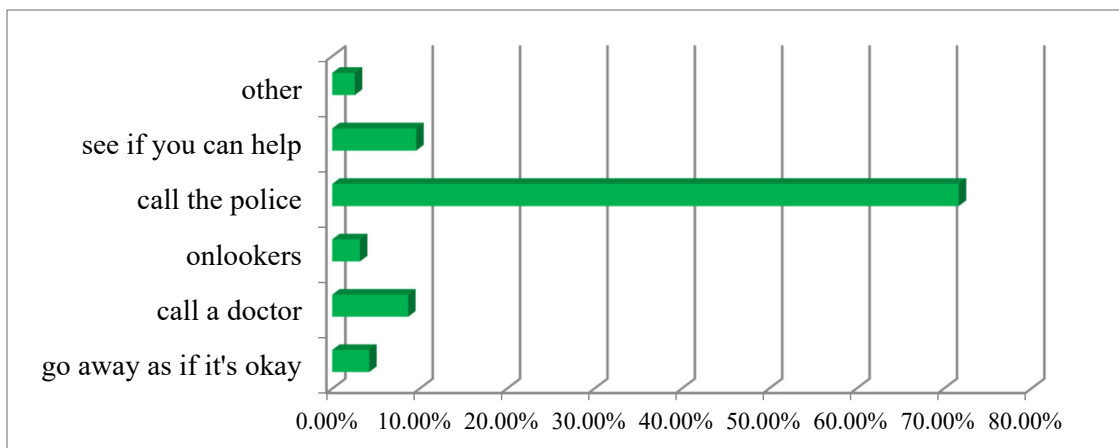


Figure 7. If you saw someone fall to the ground, what would you do?

Table 7. If you saw someone fall to the ground, what would you do?

If you saw someone fall to the ground, what would you do?	Number of people	Proportion
go away as if it's okay	36	4.23%
call a doctor	74	8.69%
onlookers	27	3.17%
call the police	611	71.71%
see if you can help	82	9.62%
other	22	2.58%

Figure 7 and Table 7 show that when asked, "What would you do if you saw someone on the ground?" The number of students who would "walk away as if nothing happened" was 36 (4.23%); the number of students who would "call the doctor" was 74 (8.69%); the number of students who would "watch" was 27 (3.17%); and the number of students who would "call the police" was 27 (3.17%). 27 students (3.17%); 611 students (71.71%) planned to "call the police"; 82 students (9.62%) thought they would "see if they could help"; and 611 students (9.62%) thought they would "call the police". The number of students who thought "see if we can help" was 82, accounting for 9.62%; "other" was 22, accounting for 2.58%.

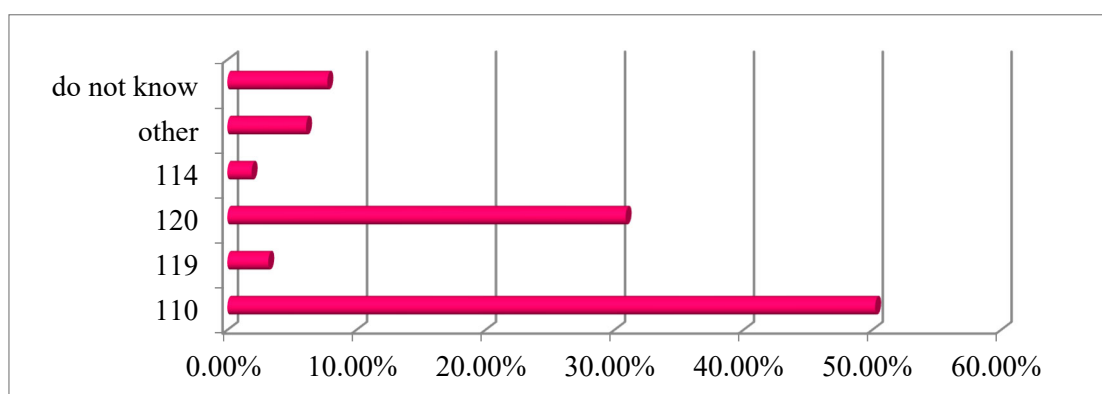


Figure 8. Which number will you call when you encounter the situation listed above?

Table 8. Which number will you call when you encounter the situation listed above?

When faced with the above situations listed in question, which number would you call?	Number of people	Proportion
110	428	50.23%
119	27	3.17%
120	263	30.87%
114	16	1.88%
other	52	6.10%
do not know	66	7.75%

When asked, "Which phone number would you call when you encounter the above situation listed in question 5?" The number of students who intend to call "110" is 428, accounting for 50.23% of the total number of respondents; the number of students who intend to call "119" is 27, accounting for 3.17% of the total number of respondents; the number of students who intend to call "120" was 263, accounting for 30.87% of the total number of students surveyed; 16 students intended to call "114", accounting for 1.88% of the total number of students surveyed; 52 students called other phone numbers, accounting for 6.10% of the total number of students surveyed The number of students who said "don't know" was 66, accounting for 7.75% of the total number of students surveyed.

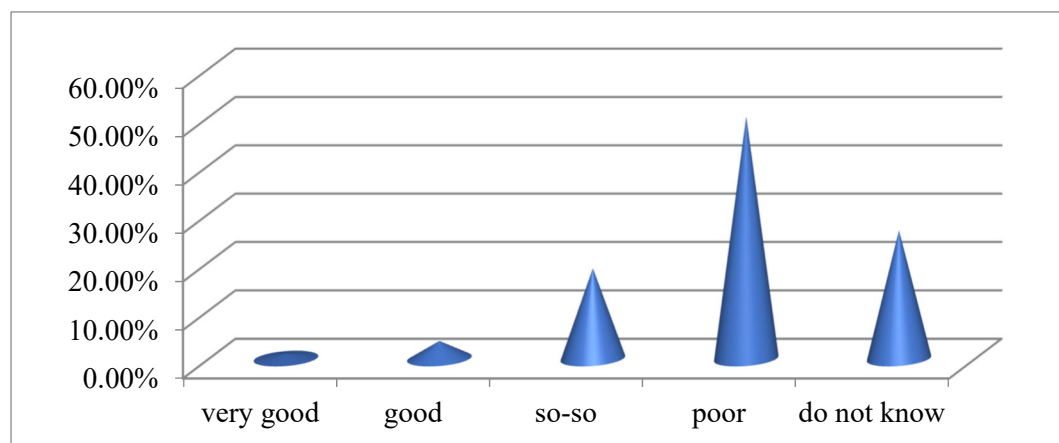


Figure 9. What do you think is the emergency response quality of students in your school?

Table 9. What do you think is the emergency response quality of students in your school?

What do you think is the emergency response quality of students in your school?	Number of people	Proportion
very good	9	1.06%
it is good	31	3.64%
so-so	159	18.66%
poor	427	50.12%
do not know	226	26.53%

When asked, "How do you think the quality of emergency response of students in your school is?" Figure 9 and Table 9 show that 9 students, or 1.06% of the total number of students surveyed, thought "very good", 31 students, or 3.64% of the total number of students surveyed, thought "good", 159 students, or 18.66% of the total number of students surveyed, thought "fair", and 427 students, or 50.12% of the total number of students surveyed, thought "poor". There are 159 students who think "average", accounting for 18.66% of the total number of students surveyed; 427 students think "poor", accounting for 50.12% of the total number of students surveyed; 226 students say "don't know", accounting for 26.53% of the total number of students surveyed.

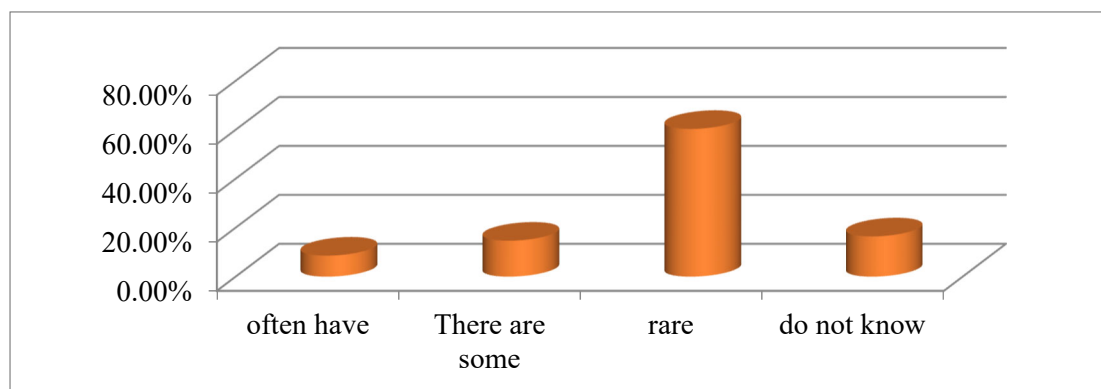


Figure 10. Does the school have corresponding educational measures on how to respond to campus emergencies?

Table 10. Does the school have corresponding educational measures on how to respond to campus emergencies?

Does the school have corresponding educational measures on how to respond to campus emergencies?	Number of people	Proportion
often have	73	8.57%
There are some	125	14.67%
rare	514	60.33%
do not know	140	16.43%

As can be seen from Figure 10 and Table 10, when asked "Does the school have any educational measures to deal with campus emergencies?", 73 of the students surveyed said "often", accounting for 8.57% of the total number of students surveyed; 125 students said "some", accounting for 14.67% of the total number of students surveyed; 514 students said "rarely", accounting for 60.33% of the total number of students surveyed. The number of students who said "rarely" was 514, accounting for 60.33% of the total number of students surveyed; 140 students said "don't know", accounting for 16.43% of the total number of students surveyed.

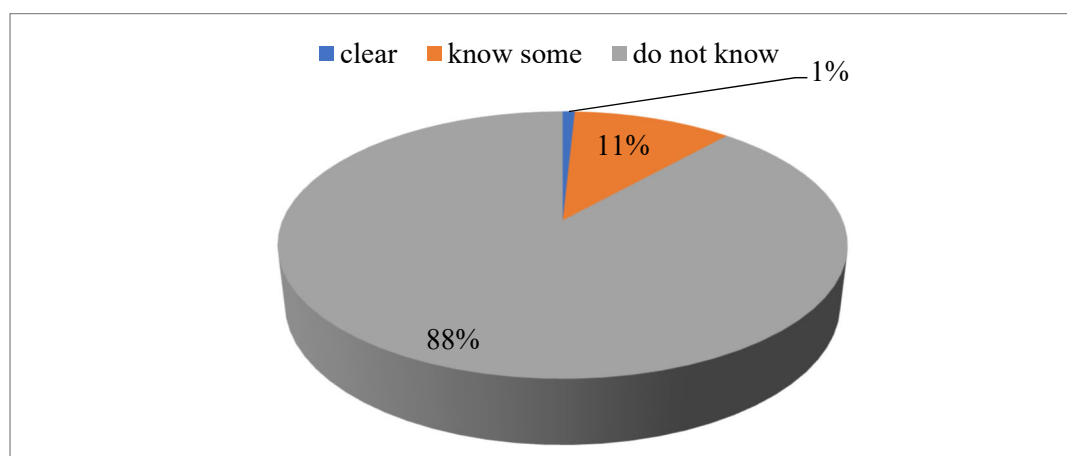


Figure 11. Do you understand the school emergency management process?

Table 11. Do you understand the school emergency management process?

Do you understand the school emergency management process?	Number of people	Proportion
clear	7	0.82%
know some	92	10.80%
do not know	753	88.38%

Figure 11 and Table 11 show that when asked "Do you know the school emergency management process?" 753 people said "no", accounting for 88.38% of the total number of respondents; 92 people said "some", accounting for 10.80% of the total number of respondents; only 7 people said "clear", accounting for 0.82%, accounting for 0.82%.

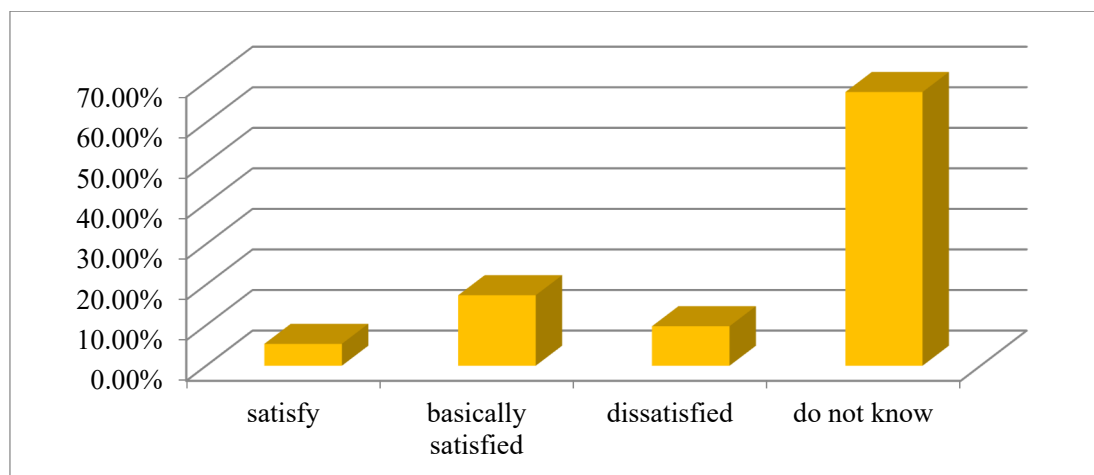


Figure 12. What do you think of the effect of emergency management in your school?

Table 12. What do you think of the effect of emergency management in your school?

What do you think of the effect of emergency management in your school?	Number of people	Proportion
satisfy	46	5.40%
basically satisfied	148	17.37%
dissatisfied	83	9.74%
do not know	575	67.49%

Figure 12 and Table 12 show that when asked, "How do you think about the effectiveness of emergency management in your school?" 46 people said they were "satisfied", accounting for 5.40%; 148 people said they were "basically satisfied", accounting for 17.37%; 83 people said they were "dissatisfied", accounting for 9.74%; and 575 people said they did not know, accounting for 67.49%. 9.74%; 575 people said "don't know", accounting for 67.49%.

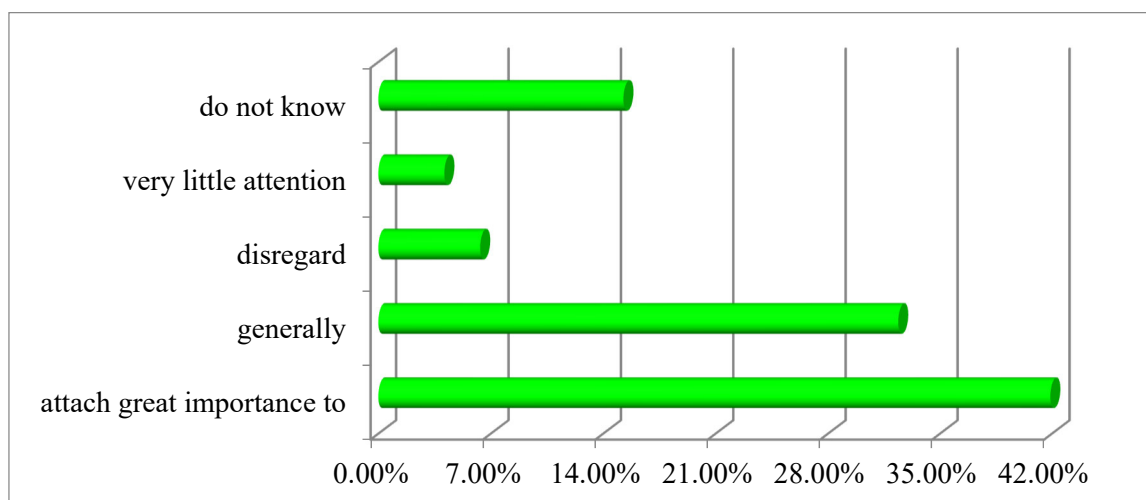


Figure 13. Do you think your school takes campus emergencies seriously?

Table 13. Do you think your school takes campus emergencies seriously?

Do you think your school takes campus emergencies seriously?	Number of people	Proportion
attach great importance to	357	41.90%
generally	276	32.39%
disregard	54	6.34%
very little attention	35	4.11%
do not know	130	15.26%

As can be seen from Figure 13 and Table 13, when asked "Do you think your school attaches importance to campus emergencies?", 357 people (41.90%) said "very much", 276 people (32.39%) said "average", 54 people (6.34%) said "not much", and 35 people (4.11%) said "very little". 6.34%; 35 people thought "very little importance", accounting for 4.11%; 130 people said "don't know", accounting for 15.26%.

5. 5. Problems of emergency management in some colleges and universities in southern Zhejiang

5.1 "Post-event mobilization" emergency management mechanism

At present, the dominant emergency management mechanism in China's universities is "post-event mobilization" rather than "pre-event prevention and control", lacking an organized emergency management pre-control mechanism, and the daily preparatory prevention, education and training, and emergency drills are also very weak. Some colleges and universities in the southern part of Zhejiang also face such a problem. In fact, many emergencies in universities can be predicted and prevented, such as fire safety incidents and logistic services. This kind of management style which attaches importance to post-event management but not to pre-event and in-event management makes all kinds of effective pre-control management techniques and means become formal, which causes the passive emergency management work and makes the management body of universities lose the time to control the emergencies in the nascent state.

5.2 Lack of timely information disposal

After the occurrence of an emergency, if the truth of the whole incident is not announced in time, it will easily cause distortion of information transmission, and various speculations and rumors will spread, causing panic among school teachers and students and increasing the difficulty of emergency management of the emergency. At present, many colleges and universities do not consider the overall situation and long-term interests after the occurrence of emergencies, but only consider how they can escape the responsibility, and often take the measures of blocking the news and resting on their laurels, which not only damage the image of the university in the hearts of teachers, students and the public, but also fail to get the assistance from the society in time and delay the best time to deal with the emergencies.

5.3 Lack of psychological intervention mechanism

Psychological intervention mechanism is often neglected in the emergency management system of university emergencies. Among the types of critical incident interventions, universities do not specifically propose intervention mechanisms in terms of psychological crisis, nor do they develop measures for prevention and response at the psychological level in specific critical incident intervention mechanisms. There are two reasons for the lack of psychological intervention and prevention mechanisms in our universities. First, there is a lack of specialized organizations to take charge of psychological interventions for students, and some universities have psychological intervention agencies, but they are virtually useless. Secondly, the number of full-time personnel for

psychological work in colleges and universities is small, and the degree of specialization is not high, and the implementation form of preventing psychological crisis is too simple.

5.4 Tendency to case-by-case handling of emergencies

Although the frequent occurrence of college emergencies in recent years has caused great concern among college administrators, the attitude of college administrators in dealing with these emergencies is not to plan for a rainy day, but mostly to mend the situation. At present, the emergencies in colleges and universities are mainly dealt with as individual cases, i.e., one case is dealt with one case, and the post-event treatment is valued, while the pre-event prevention is lightly regarded. Driven by this idea of putting the cart before the horse and utilitarianism, many colleges and universities emphasize the importance of emergency management, but in reality, the importance only remains in words and documents, and the emergency response system is virtually non-existent.

6. Ways to build emergency management mechanism of universities

6.1 Pre-event mechanism

6.1.1 Strengthen the crisis awareness of teachers and students

The colleges and universities should focus on improving the observation and sensitivity of teachers and students to the outside world, purposefully train teachers and students on emergency response capabilities, and require all teachers and students to participate in various forms of emergency management training such as fire and disaster prevention and escape drills, mental health counseling and lectures organized by the university to improve the awareness of crisis prevention, the ability to identify the sources of danger of emergencies and the ability to respond to emergencies.

6.1.2 Cultivating the legal concept among teachers and students

Colleges and universities should pay attention to the popularization of law education for teachers and students, innovate teaching forms, enrich teaching contents, improve teaching quality, fully mobilize students' enthusiasm and initiative in learning, organize teachers and students to participate in debates, knowledge competitions and other related activities, introduce local popularization of law education into campus, and enhance teachers' and students' legal awareness from all aspects of life.

6.1.3 Establishment of information monitoring system

Smooth and accurate information helps the emergency management team of colleges and universities to make correct decisions in their work and minimize the casualties and property damage caused by emergencies. First, the role of human defense, starting from various departments and student organizations, to establish a smooth information feedback mechanism; Second, the establishment of an information-based campus, through the installation of monitoring systems in key areas of the campus, to effectively control campus dynamics and provide strong support for the handling of emergencies and the creation of a safe campus.

6.1.4 Preparation of emergency management plans

Using normative documents such as the National General Emergency Response Plan for Public Emergencies and the Emergency Response Plan for Public Emergencies in the Education System as guidance, members of the plan should involve the school management, leaders of relevant functional departments and faculties, experts in social emergency management, representatives of government organizations, news media, public security and fire departments, legal advisors and other fields. Colleges and universities should evaluate the plan throughout the preparation of the plan and constantly adjust the plan to ensure the scientific preparation of the plan.

6.1.5 Building an emergency management system

Led by the Party Committee, the emergency management work pattern is formed by the main leaders personally, the leaders in charge specifically, and the departments fully implemented, with

the main person in charge of each organ department as the first responsible person to carry out the work under the unified leadership and deployment of the school's emergency management leadership team. The emergency management team should take into account both on-campus and off-campus expert groups, and at the same time focus on strengthening targeted emergency capability training for the on-campus emergency management team, and strive to cultivate a professional team with high quality and excellent business.

6.2 In-event mechanism

6.2.1 Build a full participation pattern

Emergency management in higher education should be coordinated and communicated by multiple departments within the university. All members of the emergency management leadership team should consciously commit themselves to emergency management, activate the corresponding emergency plans according to different types of emergencies, and do their own duties and responsibilities in the specific work.

6.2.2 Building an information sharing mechanism

Communication in emergency management includes both on-campus and off-campus communication. On-campus communication refers to the communication between all departments involved in emergency management, and each department should ensure information sharing and communication; Off-campus communication means that the university should strengthen links with higher authorities, government authorities and other relevant agencies to improve the effectiveness of emergency management.

6.2.3 Building a media response strategy

In the emergency management of emergencies, universities should establish scientific media response strategies, announce the progress and disposal of emergencies to the society in a timely, open and transparent manner, communicate effectively with the news media, reach information sharing, establish correct public opinion guidance and eliminate the negative social influence in time.

6.2.4 Follow the principle of disposal according to law

In the process of emergency management, colleges and universities should follow the relevant national laws and regulations, work in accordance with the "Emergency Response Law of the People's Republic of China" and "Emergency Response Plan for Public Emergencies in Education System" and other laws and regulations, and work strictly in accordance with the law.

6.3 Post-event mechanism

6.3.1 Strengthen experience summary and promote rectification and implementation

After the disposal of emergencies, the emergency management team of universities should do a good job of "looking back". First, according to the impact of the emergency, the problems in emergency management to sort out and summarize, the relevant responsible persons to be accountable, the victims to do a good job of reassurance; Second, the emergency response plan is evaluated, and the plan is supplemented and improved in accordance with the requirements of science, reasonableness and ease of operation.

6.3.2 Strengthen crisis education and enhance prevention awareness

College administrators should include crisis education for all students and faculty in the annual work plan, throughout the entire process of education and teaching, and effectively enhance the crisis awareness of students and faculty through fire drills, special lectures and other activities to improve response capabilities. Key areas on campus, such as experiments, training rooms, dormitories, etc., should be implemented to supervise the responsible persons and conduct regular safety checks to eliminate safety hazards

6.3.3 Strengthen psychological counseling and eliminate safety risks

After a sudden event, the person will be psychologically traumatized to different degrees, and the psychological self-healing period varies according to the psychological capacity of different people. College administrators should focus on strengthening psychological intervention for teachers and students, especially those involved in emergencies, to help them get out of trouble in a timely manner through psychological guidance and to avoid secondary injuries to teachers and students due to insufficient psychological intervention.

6.3.4 Timely eliminate the impact and restore normal order

The emergencies will cause many negative impacts on the normal education and teaching order and social reputation of the university, and the serious ones will affect the healthy development of the university. Colleges and Universities should focus on strengthening communication with higher authorities, security and stability departments, news media departments, teachers and students on campus and students' parents, etc., and make the results of the disposal of emergencies public in a timely, open and transparent manner to avoid rumors caused by the non-disclosure of information and strive to reshape the image of universities in a short time.

7. Conclusion

The construction of emergency management system has an important role and significance in improving the emergency management ability of colleges and universities, reducing the adverse effects of public emergencies in colleges and universities, and stabilizing the normal teaching order of colleges and universities. Colleges and universities should change their management ideas and build a more perfect emergency management system to achieve better development of colleges and universities.

Acknowledgment

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