

Table S1 A Qualitative Interview Guide for Evaluating the Effectiveness of Public First Aid Science Popularization and Training

Interview participants	Interview outline
Emergency and critical care specialist nurse	1. What knowledge and skills do you think participants should acquire after completing first aid science popularization training? 2. In your opinion, from which aspects can the effectiveness of first aid science popularization training be evaluated? 3. What changes do you think may occur after receiving first aid science popularization training?
Nurses specializing in critical care research	1. After participating in first aid popular science training, what knowledge and skills do you think the public should acquire? 2. In the process of delivering first aid science popularization training, what do you think should be paid attention to? 3. What do you think are the current shortcomings of first aid science popularization training? What is your opinion on this?
Emergency specialist physician	1. What factors do you think may influence the effectiveness of public first aid science popularization and training? 2. What specific competencies do you think the public should have after receiving first aid science popularization training? 3. In the long term, which indicators do you think can be used to reflect the training outcomes?

Table S2 Preliminary evaluation framework for public first aid science training

First indicator	Secondary indicators	Tertiary indicators
Reaction	Curriculum design	1. Diversified training methods and models
		2. Reasonable duration of training courses
		3. Practical and easy-to-understand course content
		4. Balanced proportion of theory and practical skills in course design
		5. Well-structured course progression plan
		6. Appropriate level of difficulty of the training content
		7. Reasonable training frequency
		8. Use of real-life cases and instructional skill demonstration videos
		9. One-on-one hands-on simulation training
		10. Training content developed based on relevant guidelines
	Teaching staff situation	11. The instructor demonstrates a responsible and appropriate attitude.
		12. The teaching approach is clear and easy to understand, with a solid foundation in professional knowledge and extensive practical experience.
		13. Effective on-site interaction and communication with trainees
		14. Possession of a certified professional teaching qualification.
	Training tools	15. Educational and promotional materials (e.g., brochures)
		16. Adequate basic training equipment and facilities that meet essential training needs
		17. Well-equipped training aids and high-fidelity simulation models
		18. Use of multimedia equipment for teaching purposes
	Organizational management	19. The training venue is appropriately sized
		20. A reasonable trainer-to-instructor ratio is maintained.
		21. Strict management is implemented throughout the training period.
		22. Correct initial assessment of vital signs.
		23. Properly call the emergency medical service number.

Table S2 *(continued)*

First indicator	Secondary indicators	Tertiary indicators
Learning	Theoretical knowledge	24. Cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use
		25. Other first aid knowledge, including the management of common acute emergencies such as airway obstruction and various types of trauma
		26. Cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use
		27. First aid techniques for foreign body airway obstruction
	Skills and knowledge	28. Four basic on-site trauma first aid techniques (hemostasis, dressing/ bandaging, immobilization, and transportation)
		29. A sense of responsibility to learn and apply cardiopulmonary resuscitation knowledge
		30. Performing resuscitation procedures under professional guidance
Attitude	31. Willingness to perform cardiopulmonary resuscitation (CPR) in the absence of professionals	
Behavior	Ability	32. Ability to rapidly identify different emergency situations and provide timely first aid and symptomatic management
		33. Confidence in managing emergencies in different scenarios and implementing appropriate interventions
	Willingness	34. Willingness to provide first aid to others in various emergency situations
		35. Willingness to disseminate first aid knowledge and skills to others
		36. Patient hospitalization costs (in cases of emergency resuscitation involving trainees)
Outcomes	Cost indicator	37. On-site treatment outcomes
		38. Length of hospital stay
	Effect indicators	39. Survival rate
	Benefit indicator	40.Healthcare cost savings achieved after hospitalization following first aid intervention (with trainee participation)