



Current Status and Influencing Factors of Community Medical Staff's Public Health Emergency Response Capacity

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Abstract: Since the 21st century, all kinds of major public health events have occurred frequently around the world and become increasingly serious. Most of them are concentrated in the community, which has brought huge economic losses to the community and caused serious casualties. Community medical staff are familiar with the community environment and have a close relationship with the residents. In public health emergencies, community medical staff can arrive at the scene in the shortest time and quickly carry out rescue work, which is an important force to respond to public health emergencies. Therefore, community health service centers should respond to public health emergencies to improve the risk prevention and control ability of community medical staff and the ability to respond to public health emergencies. To provide scientific basis for improving the emergency response capacity of community medical staff by investigating the current situation of community medical staff's emergency response ability to public health events and analyzing the influencing factors.

Keywords: Community medical staff; Public health emergencies; Emergency response capacity; Status quo; Influencing factors

1. Introduction

As the frontline guardians of the public health system, community health workers are facing unprecedented challenges in the context of increasing complexity and frequency of public health events. Therefore, in building the public health system, improving the emergency response capacity of community medical workers should be given priority. By optimizing resource allocation, strengthening training and exercises, and building a diversified support system, the emergency response capacity of community medical staff should be continuously improved to cope with the challenges[1] brought by the complexity and frequency of public health events. Only in this way can we ensure that when public health events occur, community medical staff can respond quickly and effectively, and escort the safety of community residents.

2. Analysis of community medical staff's ability to respond to public health emergencies

2.1 Current situation of practical operational capacity

A series of phenomena worth thinking about were observed in terms of the practical ability of community medical staff. According to a study of the multiple urban community medical institutions, according to the survey data of about 60% of the community medical staff in the face of public health emergencies, can promptly and accurately perform basic emergency treatment process, such as rapid isolation, preliminary diagnosis and report. However, there are still nearly 40% of the medical staff in practice show some shortcomings, especially in the use of emergency equipment and advanced life support skills, such as cardiopulmonary resuscitation (CPR) and the use[2] of automated external defibrillator (AED).

There are various factors affecting the practical operation ability of community medical staff. On the one hand, due to the limitations of educational background and work experience, some medical workers are not proficient in learning and mastering new emergency technologies and equipment, such as the use of new rapid detection reagents and telemedicine systems. On the other hand, the lack of training and exercises is also an important reason. Therefore, strengthening practical operation training and improving the practicality and pertinence of emergency drills are the key to improving the practical operation ability of community medical staff.

2.2 Insufficient resource allocation

In the practice of community medical staff in responding to public health emergencies, insufficient resource allocation has become one of the key factors restricting their emergency response capacity. According to relevant statistics, the community health service centers in some areas of China, especially in remote and underdeveloped areas, are seriously

lagging behind in the deployment of medical equipment, such as ventilators, defibrillators and other key first-aid equipment, which is far below the level[3] of developed countries. This lack of hardware facilities, directly affect the community medical staff in case of an emergency treatment efficiency and success rate, make some of this can save life missed opportunities due to lack of equipment.

3. Discussion on the influencing factors of community medical workers' emergency response capacity in public health emergencies

3.1 Individual psychological quality and adaptability

In the process of community medical staff responding to public health emergencies, individual psychological quality and adaptability are particularly important. Study shows that good psychological quality and ability of the medical staff in the face of emergency, can quickly adjust state of mind, keep calm and to make more accurate judgment and decision making. For example, in the early stage of the outbreak of COVID-19 in 2020, a doctor in a community hospital quickly organized an emergency medical team with his excellent psychological quality and adaptability, which effectively alleviated the shortage of local medical resources[4]. The doctor in the face of great pressure, can remain calm, rapid analysis of epidemic situation, formulate reasonable strategies, it fully reflects the psychological quality and adaptability in the importance of public health emergencies.

In addition, from the perspective of psychology, individual psychological quality and adaptability can be improved through acquired training. For example, simulated combat exercises and psychological counseling can help medical staff improve their psychological quality and adaptability to emergencies. By strengthening psychological quality training and emergency drills, improving the psychological quality and adaptability of medical staff can better respond to possible public health events in the future and ensure the safety of people's lives and health[5].

3.2 Emergency response mechanism of community health service institutions

The emergency response mechanism of community health service institutions is the first line of defense to deal with public health emergencies, and its construction and improvement are directly related to the health and safety of community residents. At present, many community health service institutions have initially established emergency response systems, including epidemic reporting system, emergency medical treatment process, and material reserve management. However, there are still some problems in the actual operation, such as slow emergency response speed, poor information transmission, and unreasonable resource allocation. Therefore, community health service institutions must always be vigilant and constantly improve the emergency response mechanism to ensure that they can respond to public health emergencies quickly and effectively at critical moments.

4. Strategies and suggestions for improving the emergency response capacity of community medical staff in public health emergencies

4.1 Improvement of hardware facilities

In the practice of community medical staff responding to public health emergencies, the improvement of hardware facilities is an indispensable part of improving the emergency response capacity. At present, many community health service institutions are faced with problems such as obsolete medical equipment and insufficient emergency supplies, which directly affect the speed and effect of emergency response of medical staff. Specifically, the improvement of hardware facilities can be started from the following aspects. First, increase protective equipment, such as N95 masks, goggles, goggles, etc., to ensure that medical staff can be fully protected when they touch patients. Second, upgrade medical equipment, such as the introduction of advanced ventilators and monitors, to improve the efficiency and quality[6] of treatment. Finally, the emergency materials reserve system should be improved to ensure that in the event of an emergency, the necessary materials can be quickly mobilized to ensure the smooth progress of the treatment.

4.2 Integration of software resources

With the rapid development of information technology, software resources such as medical management software, emergency command systems, and online training platforms have become key tools to improve the emergency response capabilities of community medical staff. However, in practical application, the integration of these software resources is not ideal, and there are problems such as information islands and complex operation, which seriously affect the efficiency and quality of emergency response.

In order to effectively integrate software resources and improve emergency response capabilities, we can learn from the concept of "smart healthcare" and build a unified medical information management platform to realize seamless docking and sharing[7] of information among departments. At the same time, the platform can also integrate emergency command, online training, data analysis and other functions to provide comprehensive support for community medical staff. In the process of software resource integration, we should not only pay attention to the advancement and practicability of technology, but also pay attention to its application effect in practice. Therefore, it is suggested that health administrative departments at all levels and community health service centers should increase investment to promote the integration and optimization of software resources, so as to ensure that community medical staff can respond quickly and accurately to public health emergencies, and provide a strong guarantee for people's safety and health.

4.3 Establish a regular training system

At present, the emergency knowledge and skills of many community medical workers are not ideal, which directly affects their ability to respond to emergencies. Therefore, it is essential to build a systematic and regular training system for improving the emergency response ability of medical staff.

Specifically, the regular training system should include regular professional skills training, simulated combat exercises and psychological adjustment training. In terms of training content, targeted training courses should be designed based on the actual situation of public health events. For example, in response to the frequent epidemics of infectious diseases in recent years, special training on the prevention and control of infectious diseases can be carried out, including epidemic surveillance, case reporting, isolation measures, etc. At the same time, also can invite experienced experts to lecture, through case analysis, simulation exercises, let the medical staff more intuitive understanding of the emergency treatment process.

In addition, the regular training system should also pay attention to actual combat simulation exercises. By simulating real public health events, medical staff can respond in an environment close to actual combat, which can effectively improve their emergency response ability and team cooperation ability[8]. In the process of establishing a regular training system, we should not only pay attention to the teaching of knowledge, but also pay attention to the application of practice. Only in this way can we truly improve the emergency response ability of community medical staff and contribute to the improvement of the public health system.

4.4 Improve emergency response ability by simulating actual combat

Through simulated combat, medical staff can exercise their decision-making ability, teamwork ability and on-site disposal ability in an environment close to the real situation. Taking an influenza outbreak as an example, a community health service center quickly launched a simulated combat training program after receiving the report of the epidemic. By simulating the epidemic scene, they set up multiple emergency response scenarios, including case detection, isolation and transport, and environmental disinfection. In the simulation process, medical staff not only became familiar with the emergency response process, but also learned how to stay calm in a high-pressure environment, communicate effectively, and make optimal decisions with limited resources. After this simulated training, the center was able to respond to the real influenza epidemic quickly and orderly, and effectively control the spread of the epidemic.

5. Concluding remarks

In conclusion, community medical workers play an important role in public health emergencies, but there are deficiencies in practical operation ability, knowledge and skills, and resource allocation. For example, individual psychological quality and the strain capacity and emergency mechanism of community health service institutions, degree of community support and cooperation, and other factors on the community medical staff of emergency ability have a significant impact. Based on this, this paper proposes to improve the emergency response ability of community medical staff by improving hardware facilities, integrating software resources, establishing a regular training system, simulating real combat to improve the emergency response ability, and strengthening community and public participation.

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