

## PERSPECTIVE

# Recommended psychological crisis intervention response to the 2019 novel coronavirus pneumonia outbreak in China: a model of West China Hospital

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## Abstract

The novel coronavirus pneumonia (COVID-19) epidemic has brought serious social psychological impact to the Chinese people, especially those quarantined and thus with limited access to face-to-face communication and traditional social psychological interventions. To better deal with the urgent psychological problems of people involved in the COVID-19 epidemic, we developed a new psychological crisis intervention model by utilizing internet technology. This new model, one of West China Hospital, integrates physicians, psychiatrists, psychologists and social workers into Internet platforms to carry out psychological intervention to patients, their families and medical staff. We hope this model will make a sound basis for developing a more comprehensive psychological crisis intervention response system that is applicable for urgent social and psychological problems.

**Key words:** novel coronavirus; COVID-19; psychological crisis intervention; mental health

Since December 2019, Wuhan and gradually other places of China have experienced an outbreak of pneumonia epidemic caused by the 2019 novel coronavirus (2019-nCoV, later named SARS-CoV-2).<sup>1</sup> The World Health Organization has declared the current outbreak of COVID-19 in China as a Public Health Emergency of International Concern. As of 10:00 Feb 13, 2020, the epidemic has caused 1366 deaths out of 59 834 confirmed and 16 067

suspected cases.<sup>2</sup> Some unprecedented measures were taken to stop the spread of the virus including cancelling of gatherings, extending the Chinese New Year holidays, and limiting the number of people in public places (e.g. train stations and airports). The outbreak itself and the control measures may lead to widespread fear and panic, especially stigmatization and social exclusion of confirmed patients, survivors and relations, which may

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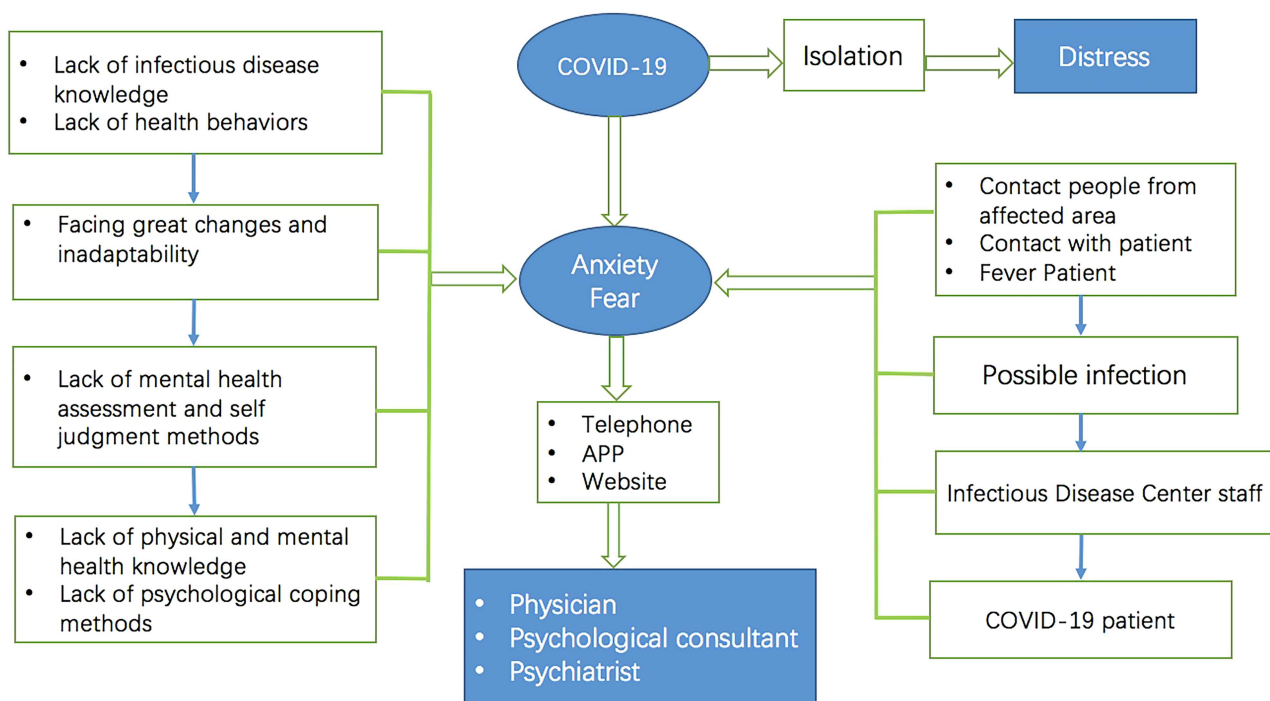


Figure 1. The emotion hypothetical model of psychological crisis intervention in COVID-19 epidemic.

escalate into further negative psychological reactions including adjustment disorder and depression.<sup>3-5</sup>

Sudden outbreaks of public health events always pose huge challenges to the mental health service system. Examples include the HIV/AIDS epidemic that captivated world attention in the 1980s and 1990s, the severe acute respiratory syndrome (SARS) in 2002 and 2003, the H1N1 influenza pandemic of 2009, the Ebola virus outbreak in 2013, and the Zika virus outbreak in 2016.<sup>6</sup> During these epidemics, the consequences on the psychosocial wellbeing of at-risk communities are sometimes largely overlooked, especially in the Ebola-affected regions, where few measures were taken to address the mental health needs of confirmed patients, their families, medical staffs or general population.<sup>7</sup> The absence of mental health and psychosocial support systems and the lack of well-trained psychiatrists and/or psychologists in these regions increased the risks of psychological distress and progression to psychopathology.<sup>8</sup> The lack of effective mental health systems added to the poverty in Sierra Leone and Liberia.<sup>9</sup>

In China, the mental health service system has been greatly improved after several major disasters, especially the Wenchuan earthquake. In the process of dealing with group crisis intervention, various forms of psychosocial intervention services have been developed, including the intervention model of expert-coach-teacher collaboration after the Wenchuan earthquake<sup>10</sup> and the equilibrium psychological intervention on people injured in the disaster incident after the Lushan earthquake.<sup>11</sup> With the support for remote psychological intervention provided

by the development of Internet technology, especially the widespread application of 4G or 5G networks and smartphones, we developed a new intervention model to handle the present COVID-19 public health event. This new model, one of West China Hospital, integrates physicians, psychiatrists, psychologists and social workers into Internet platforms.

We propose that the psychological crisis intervention should be dynamic, adapted to suit different stages of the epidemic, i.e., during and after the outbreak. During the outbreak, mental health professionals should actively participate in the overall intervention process for the disease, so that the mental health and psychosocial response can be mobilized in a timely fashion.<sup>12</sup> Specifically, psychological crisis interventions should be integrated into the treatment of pneumonia and blocking of the transmission routes. In this stage, psychological crisis intervention should include two simultaneous activities: (1) intervention for fear of disease, carried out mainly by physicians and assisted by psychologists; (2) intervention for difficulty in adaptation, mainly by social psychologists. Among them serious mental problems (e.g. violence, suicide behaviors) must be managed by psychiatrists. Such emotion hypothetical model of psychological crisis intervention is shown in Fig. 1.

During the epidemic, rapid integration of the government and social forces into the Internet framework can maximize effective management of the psychological crisis. We established a pyramid structure of psychological crisis management with government

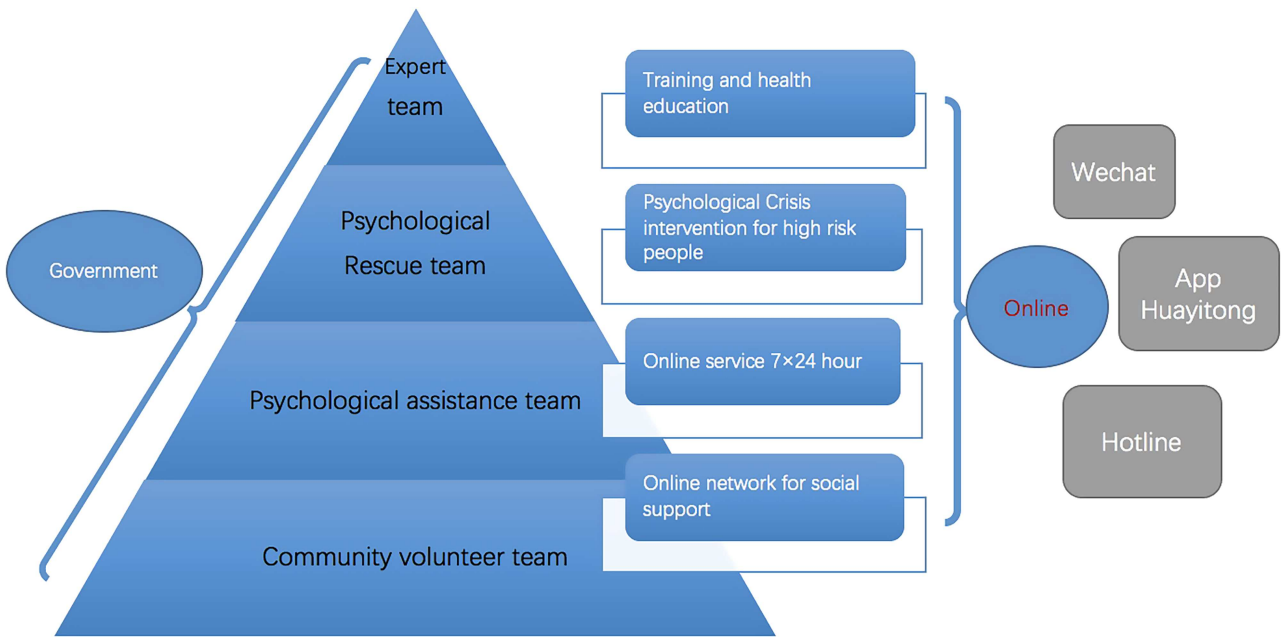


Figure 2. Network tools and organization framework of psychological crisis management for COVID-19 epidemic.

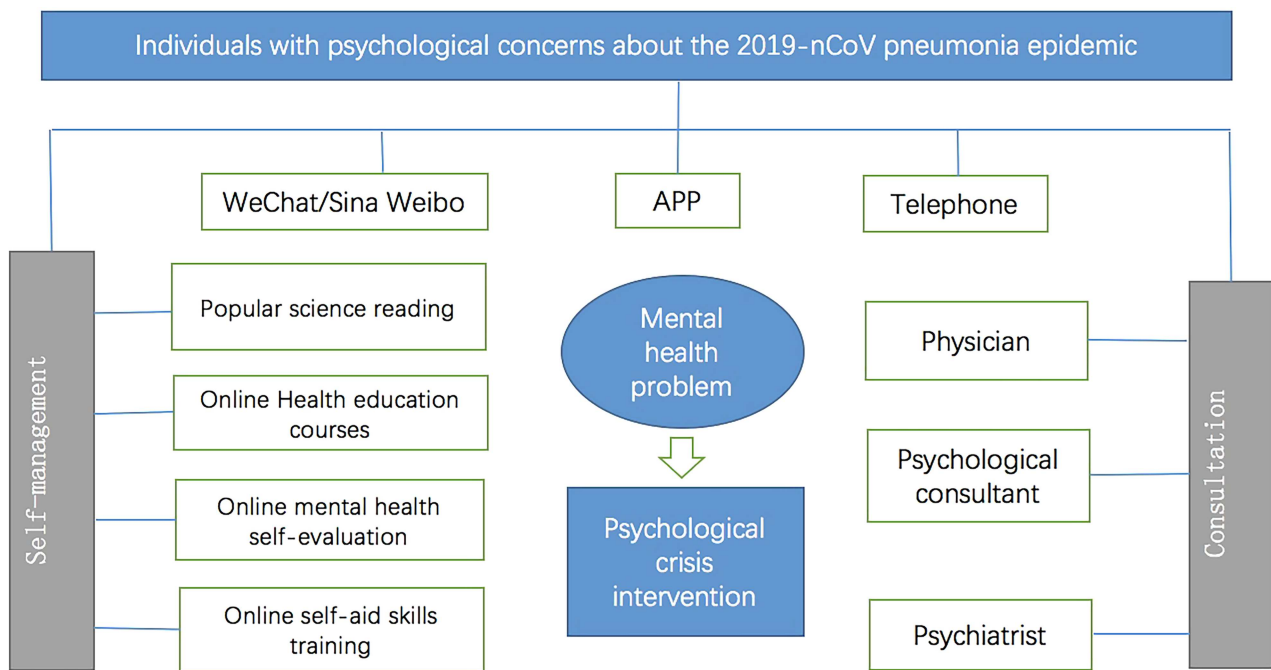


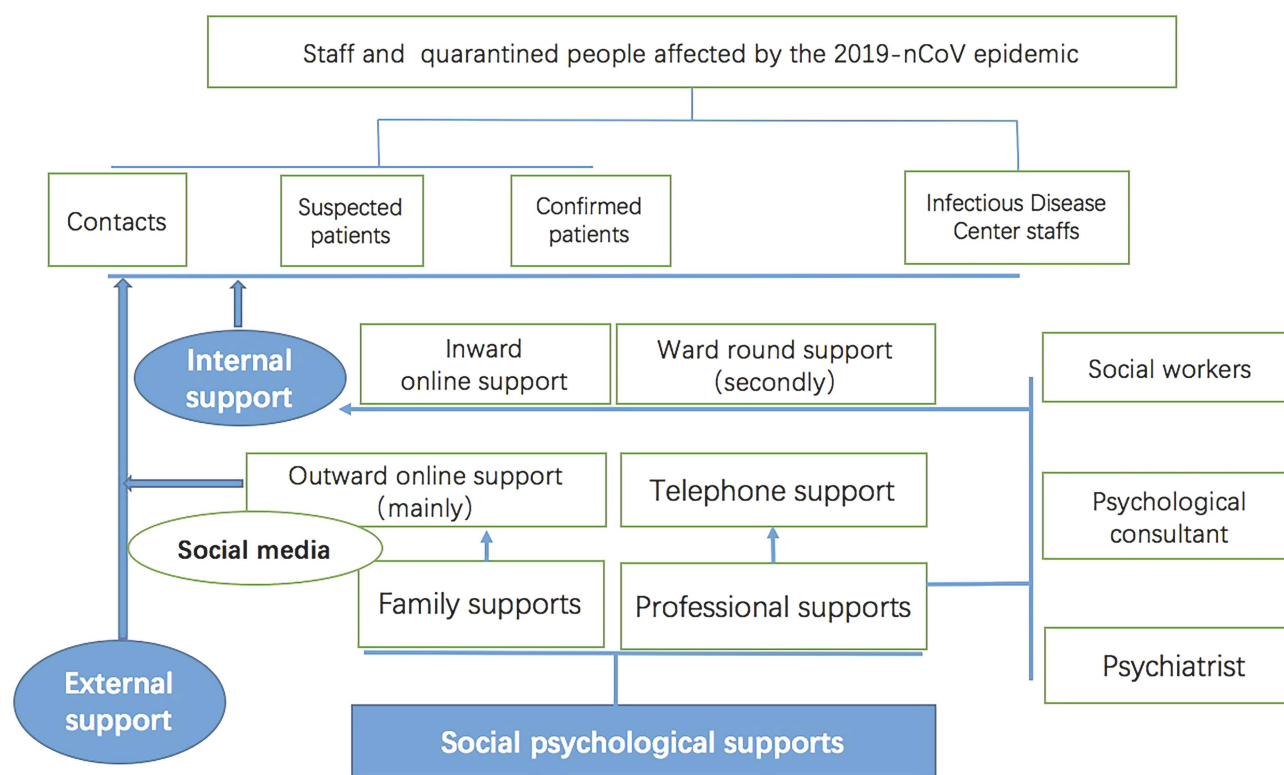
Figure 3. Online psychological intervention methods for COVID-19 epidemic.

as the core leader. At the bottom of the pyramid are communities, which mainly provide psychosocial support. Psychological assistance (such as hotline, online consulting) is used to identify and help the target groups who need intervention. Through the Huayitong app and Psyclub applet (two integrated APPs for online registration, appointment, payment and other functions for West China Hospital and Sichuan psychological consultant platform), telephone hotline and WeChat

platform, we quickly organized physicians at all levels of the West China Hospital (including retired professors) and psychologists from all over Sichuan Province to form psychological rescue teams to formulate solutions (e.g. developing technical guidelines and training programs, starting online consultation and setting up problem feedback mechanisms). Psychological rescue teams conduct crisis interventions for confirmed patients and front-line staff. The expert team at the top of the pyramid

**Table 1.** Work list of online Psychological interventions.

Online service		Technical guidance	Problem feedback mechanism
Service content	Service platform		
<ul style="list-style-type: none"> <li>• Knowledge about prevention and control of the novel coronavirus</li> <li>➢ How to wear a mask properly?</li> <li>➢ How to protect yourself when you go out: five protective measures recommended.</li> <li>➢ How to deal with information explosion related to virus epidemic</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge about self-psychological adjustment skills</li> <li>➢ Maintain emotional stability: an abdominal breathing relaxation method.</li> <li>➢ How to face the anxiety and fear resulted by the novel coronavirus: advices from West China Hospital experts</li> <li>➢ Audio of mindfulness-based stress reduction</li> </ul>	<ul style="list-style-type: none"> <li>• Hotline service: 9:00 am-9:00 pm</li> <li>• Online consulting: 9:00 am-9:00 pm</li> <li>• Online assessment: 7×24 h</li> <li>➢ General anxiety disorder-7 (GAD-7)</li> <li>➢ Mood Index Questionnaire</li> <li>➢ Patient Health Questionnaire-9</li> <li>➢ Pittsburgh sleep quality index</li> </ul>	<ul style="list-style-type: none"> <li>• WeChat official account of West China Hospital, Sichuan University</li> <li>• Sina Weibo official account of West China Hospital, Sichuan University</li> <li>• WeChat official account of West China Hospital Mental Health Center</li> <li>• Sina Weibo official account of West China Hospital Health Center</li> <li>• APP: Huayitong</li> <li>• WeChat applet: Psyclub</li> </ul>
		<ul style="list-style-type: none"> <li>• E-book: Handbook for mass psychological protection against the zoonotic 2019 novel coronavirus (2019-nCoV)</li> <li>• E-book: For the online prevention and control of the zoonotic 2019 novel coronavirus (2019-nCoV): Huaxi model</li> </ul>	<ul style="list-style-type: none"> <li>• Working group: summarize and report daily work everyday</li> <li>• Psychological specialist training supervision group for relevant trainings</li> </ul>



**Figure 4.** Online social psychological support for quarantined population and staff.

provide health education and training during the whole process (Fig. 2).

How to quickly identify the emotional and stress problems of individuals is an important part of basis for psychological intervention. We screened the mental health status of suspected cases, medical staffs and general population via WeChat platform and/or telephone by using questionnaires (e.g. Mood Index Questionnaire, Patient Health Questionnaire-9) as the evaluation tool.<sup>13,14</sup> Proper intervention strategies were chosen based on the screening results. Follow-up is performed regardless of whether the individual reports

mental health problems or not. The process and content of psychological intervention is shown in Fig. 3 and Table 1.

After the epidemic outbreak, psychosocial support mainly focuses on the quarantined people and medical staffs working for them (Fig. 4). Social support and psychological intervention are mostly provided by family members, social workers, psychologists, and psychiatrists to isolated patients, suspected patients, and close contacts, primarily through telephone hotline and Internet (e.g. WeChat, APPs). Medical staffs working for the quarantined are the special group who need a lot of

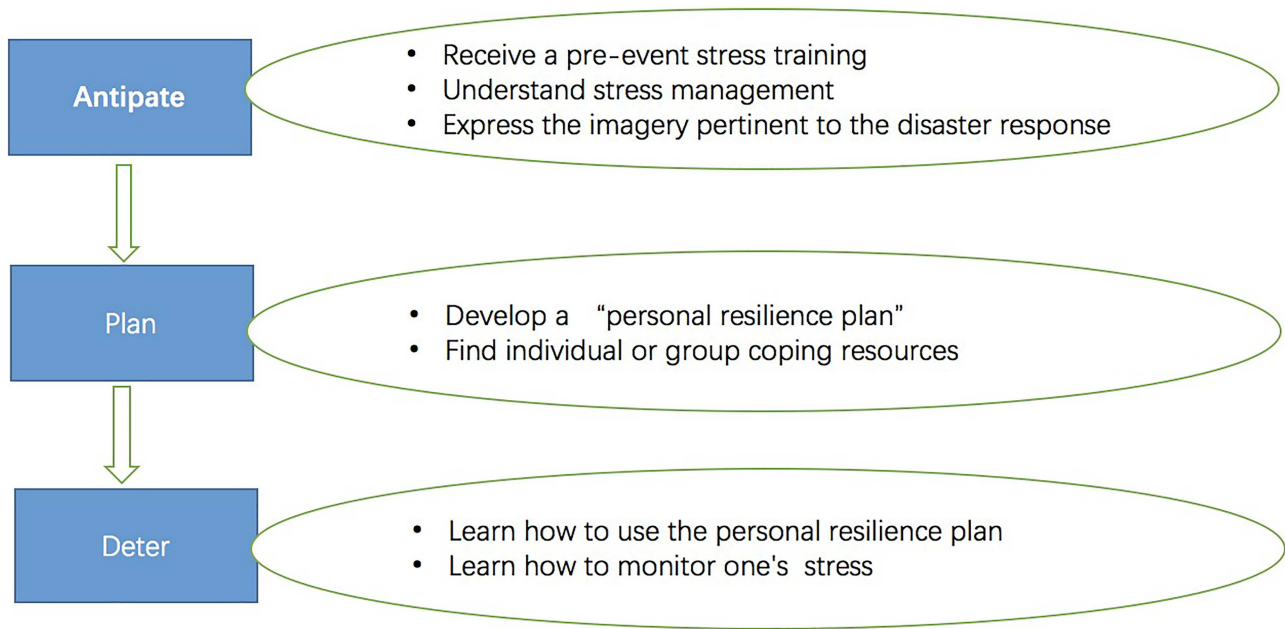


Figure 5. The process of Anticipate, Plan and Deter (APD) methods for the psychological intervention of epidemics.

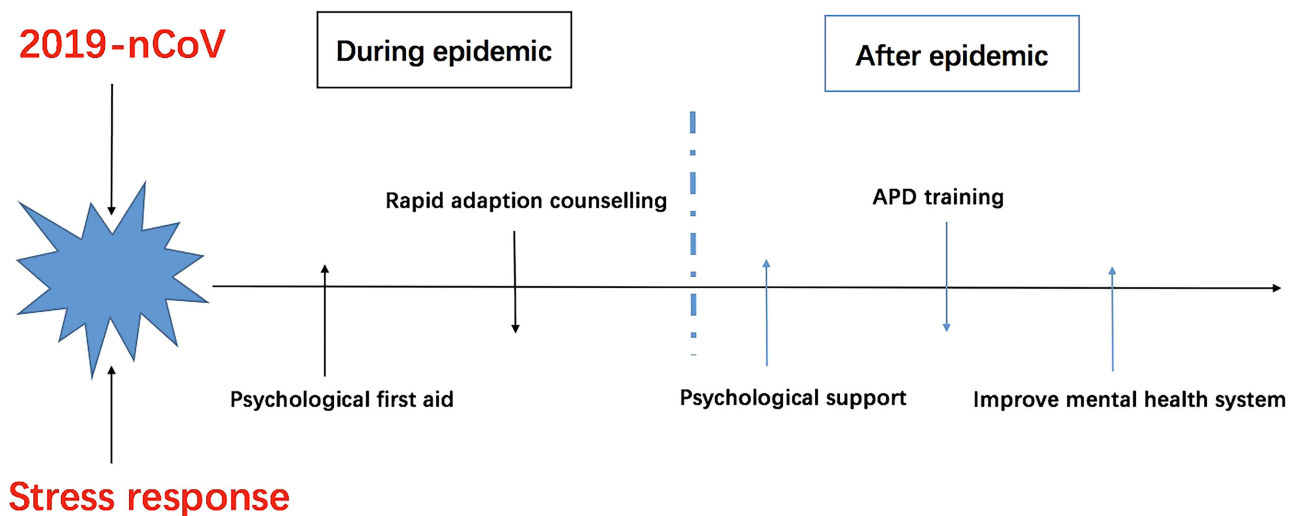


Figure 6. The two-stage model of psychological intervention for epidemics.

social support, and they are also an important force to provide social support for the isolated patients. To guarantee their continued effective work, their mental health status should be monitored and a continuum of timely interventions should be made available to support them. The Anticipated, Plan and Deter (APD) Responder Risk and Resilience Model (Fig. 5) is an effective method for understanding and managing psychological impacts among medical staffs, including managing the full risk and resilience in the responder “hazard specific” stress.<sup>15</sup>

In the APD process, medical staffs receive a pre-event stress training focusing on the psychosocial impact of high-casualty events on the hospital and field disaster settings. During the training, participants are given

the chance to develop a “personal resilience plan”, which involves identifying and anticipating response challenges. After that they should learn to use it in real intervention response.

Based on our experience about the model of psychological intervention practicability and effectiveness, West China Hospital developed and is carrying out the psychological rehabilitation plan, namely the two-stage psychological intervention model (Fig. 6). The central idea is to integrate Internet technology to the whole process of intervention, and to combine early intervention with later rehabilitation. In order to help patients and general population in the COVID-19 epidemic, we are trying to share it with all mental health hospitals in



Sichuan Province to help relieve psychological aftershock of the public emergency. However, there are still many problems with the current psychological interventions, including effective utilization of Internet resources/tools, and efficient cooperation between medical staffs and psychologists.

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## Conflict of interest

None declared.

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