China Neighborhood and Village Committee confront the COVID-19 Pandemic: Cultural History and Tracking back Review of Relevant Public Health Events in Last Century

Huibing Tan^{1,4}*, Yunge Jia^{2#}, Yinhua Li^{1,3#}, Wei Hou¹

- ¹ Department of Anatomy, Jinzhou Medical University, Jinzhou, Liaoning 121001, China
- ² Department of Pathology, Heji Hospital Affiliated to Changzhi Medical College, Changzhi, Shanxi, 046011, China.
- ³ School of Rehabilitation and Sports Medicine, Jinzhou Medical University, 121001, China
- ⁴ Key Laboratory of Neurodegenerative Diseases of Liaoning Province, Jinzhou Medical University, Jinzhou, Liaoning, 121001, China

* Correspondence:

Department of Anatomy, Jinzhou Medical University, Jinzhou, Liaoning 121001, China, davidtanhb@foxmail.com

ABSTRAT:

Managing epidemics need to unite each individual of the nations. Lockdown is an essential strategy to fatal and threatening epidemic. All of the citizens should realize that each of people has a responsibility to support the public health crisis. How to organize individual to fight against the epidemic plaque depends each of them. This essay discussed the COVID-19 pandemic relevant selfgovernance of community from a historical perspective in China. Self-governance of neighborhood committee and community residential office in urban and rural helped to control the COVID-19 pandemic in the communities in China. Co-operation and collective responsibility of citizens and community support is a critical condition to prevent epidemic. The community self-governance can track back Qin Dynasty in China history. It established baojia system to maintain social control for thousand years. Now, the community-based system, baojia system is becoming more autonomous for local citizenship and socialized governance in China. We reviewed a historical pneumonia plaque in North China in 1911. Chinese doctor, Wu Lien-teh (伍連德) confronted the epidemic crisis with many measures such as lockdown, quarantine, the wearing of mask, setup mobile hospitals, travel restriction, the cremation of victims, and border control. Dr. Wu made effort to establish the modern public health service in China. We think that the combination of culture background of China community with modern public healthcare system determinedly played important role to control the COVID-19 pandemic.

Keywords: neighborhood committee, collective responsibility, Baojia system, COVID-19 pandemic, Wu Lien-teh, China

The outbreak of the COVID-19 plaque in Wuhan quickly became a worldwide public event in 2020. The state has taken serial measures to control the spread infections such as: lockdown, lockdown, quarantine, the wearing of mask, setup mobile hospitals, travel restriction, the cremation of victims, and border control. It needs citizens' co-operations to accomplish all the measures. We think that the action of the local community dynamically shaped the geographical spread of epidemics. Residential management has a history and culture background[1]. The storm of the infection threatens everyone who exposed in the community for the human to human infection. How does each individual participate the plague campaign determine the structure of the society?

In China, every community has a neighborhood committee and community residential office[2]. It plays many roles in urban affairs as well as rural autonomy in China society[3-7]. The social community links with state through the neighborhood and village committee[8, 9]. It is helping and working well during the COVID-19 pandemic. China approvals a law: Organic Law of the Urban Residents Committee of the People's Republic of China [Revised]《中华人民共和国城市居民 委员会组织法》(1989) http://en.pkulaw.cn/display.aspx?cgid=a5fe2489ffa24ee1bdfb&lib=law. It followed traditional "four selves": "自我管理、自我教育、自我服务、自我监督"translated as "selfmanagement, self-education, self-service, and self-supervision" [10, 11]. Besides elections for democracy, in the countryside, village also had similar administration origination that organized with village committee and village leadership[11-13]. The history of the law can trace to Republic of China before 1949. It was a neighborhood administrative system: the bao-jia system(保甲制度). The bao-jia system that Republic of China government requested was initially executed around 1923, but it was not working well until 1934[14, 15]. The bao-jia system was firstly executed in these two cities: Nanking 南京 and Peking 北平 in 1935 (https://zh.wikipedia.org/wiki/保甲制度). The organization was one jia(甲) grouped by 10 families, and 10 jia(甲) united one bao(保). One jia managed by a leader jia. One bao managed by a leader bao. Besides self-administration, it also worked for war and anti-revolution. Bao-jia system enforced during civil war[14, 15]. Baojia system definitely played an important role in Anti-Japanese war to fight against Japanese troops[16-20]. Japanese governing zone also relied on the similar Bao-jia system during the second world war in China[21, 22]. Ironically, anti-Japanese forces also used bao-jia system to fight against Japan in Japanese controlled the territory [23, 24]. Actually, the similar system can track to song dynasty [25], an imperial dynasty of China (960-1279) of 10 户为"甲", 10 甲为"保"the same pattern, "one jia(甲) grouped by 10 families, and 10 jia(甲) united one bao(保)"[25]. It was a household registration system for military service system. It may help government to interaction, incentives and joint responsibilities in the community[26-28]. In Qin Dynasty, B.C. 221- B.C. 207, the basic unit of neighborhood was that five-family grouped Wu (伍). Ten families grouped Shi(什). Governor for local neighborhood management was elected by villagers. It developed a system of collective punishment also called mutual punishment, lianzuo(联坐) [29, 30]. One family crime made trouble for collective punishment of five families or ten families. They were not allowed to move without permission. They supervised and reported each other for any crime by way of mutual surveillance. If they failed to disclose criminal case, they would got collective punishment. In order to not be punished, a family not only did not break the law themselves, but also kept an eye on the neighbors to break the law. In order to avoid punishment, the neighbors were the safest choice to keep an eye on the tenants or formers around them. The basic unit that constituted mutual supervision was "Wu", which allowed people to monitor each other and exposed each other by "locking" together, so as to

ensured that residents (farmers) would not leave their homeland, run away indiscriminately, or sneak into other countries. A family of crimes and neighbors sitting (lianzuo) next to each other made the Qin dynasty's neighbors form a relationship of mutual surveillance. This baojia system may generate a collective responsibility for its mutual aid functions and mutual benefits [31].

Traditional urbans of China cities were confined with city walls and were gated fifty years ago[32]. The city or gated communities or wards that could be locked at night, and autonomy of neighborhood life could be controlled by the governmental organizations[33]. In a broaden generalized concept of the state for Chinese, the great wall as historical cultural building is a typical state enforcement that control resistance and defense attacks. Wall is a cultural symbol for Chinese. We must emphasize that Hukou system, a new system has been built up for control citizen's resident (moving and migration) in China[34]. Hukou system is a very specialized registration that bundles personal identification with people residential address. It can also be considered with registration system back to the baojia system[35]. Hukou may also link with employment, social security, social insurance and personal beneficial affairs. Any person can be tracking with the help of Hukou system. Another reinforce factor is the work-unit, danwei (单位) which is employee working organizations or employers[36, 37]. Danwei is very strong auxiliary institutions, a specialized community in China. Danwei system includes the governmental organizations, education organizations such as university, primary school, middle school and college, hospitals, business companies and manufactures etc. Danwei also has play important role in the confrontation with the pandemic.

Update, the neighborhood management system is still a vertical system of interlock chain from county, township, village, street and neighborhood in mainland China, Taiwan[38] and Macao[39, 40]. In Vietnam war, it also played a role in the war conflict[41]. The facility offers many activities that are something comparable to China.

In China, the manager of the present community is a professional position and not civil servant while get pay from government and local community[42-44]. Some of professional staff in community residential office of neighborhood committee should have a university degree[45, 46]. In cities or township, a building may need a building leader or a street leader[47-49]. The leader is a volunteer elected by neighborhood and should have a good reputation or leadership to organize activities for all families. The building leaders provide very flexible service for local residents[49, 50]. Anything of public issues should be discussed and confirmed by the building leader and manager of neighborhood committee and Community residential office[50].

During the pandemic of COVID-19, the member of community residential office is in charge of distribution masks and PPEs, food and offer service for any sickness patients, especially for the elders, pregnant women and young kids if need any help. They helped maintain checkpoint for all entrances around neighborhood. Many senior citizens are living Wuhan alone in their own home. The community residential officers distributed some food and other grocery to the elders for free. The relatives or young generations for each visiting should show their ID to community residential office or doorman. By the way, many Chinese communities are fenced by walls. The gated communities are typical characters in China. The security staff or a doorman (porter) are also cooperating with community residential office. Police stations are always coordinating with the

community residential office[51, 52]. Finally, China has a residential registration system that can help track every civilian during the pandemic of COVID-19. Police station is in charge of the residential registration[52]. The residential registration sometimes may be not so strictly for everybody. However, the residential registration become very strict during lockdown and travel restriction. Some people are not happy with the system. However, the registration also helped a lot for clear COVID-19 cases.

We think that China is based on for a 5000-year-history and has well developed her collectivistic cultures that are still related the baoiia system. How to control and manage of the neighborhood is already practiced in a such way for so many generations of central controlled governments. We would like to mention again. A 100 year ago (the fall of 1910), the deadly epidemic broke out in Harbin, the northeastern region of China and more than 50,000-60,000 people died[53-56]. the Qing government court-appointed Wu Lien-teh (伍連德), a Cambridge-trained doctor and public health expert to fight the plaque. Wu Lien-Teh performed the first-ever postmortem examination and further concluded the epidemic was that pneumonic plague[57] (also see https://en.wikipedia.org/wiki/Wu Lien-teh). Dr. Wu and his colleagues took several measures nowadays greatly impact on modern public health medicine[57, 58]. First of all, quarantine and isolation were set as the best ways to control the spread the infection. They authoritatively, or even brusquely took coercive public health measures: mask-wearing among medical workers, the cremation of infected bodies, travel restrictions on affected regions, built up quarantine facilities, such as mobilized hospitals, and strict home-quarantine. Officials and imperial army rounded up locals using wagons, holding them until they were no longer symptomatic, disinfected houses that held suspected patients (against their owner's wills), and forcibly quarantined people in hospitals. The challenging for Dr. Wu was that at early stage, people and western medical experts ignored to use mask to protect themselves. Dr. Mesny examined the patients without wearing mask, caught pneumonic plague and died six days later [59]. Dr. Wu specially designed gauze-cotton masks (Wu's masks) and properly applied[58]. The mask application evidently played important role to protect health-care workers and citizens[53]. According to Views of Harbin taken during the plague epidemic[60], we can also find more detail following facts: besides quarantine hospitals, they also requisite 100 railway wagons as suspect hospital; built up mobile cabin hospital in church, female patients were quarantined in their own railway wagons; built up refuge for homeless inmates (also including specially refuge for female inmates), distributed fire-wood and rice to the poor, dispatched troops to pandemic frontline. In consideration of the different stage of infections, the hospitals were very impressively classified as the following: the old plague hospital, the old suspect (isolation) hospital, the new plaque hospital, the new suspect (isolation) hospital, special hospital for medical staff and veterinary hospital etc.[60]

Definitely, Wu Lien-Teh is a plague fighter and father of the Chinese public health system[57]. In 1930, the Chinese government set up the National Quarantine Service headquartered in Shanghai and staffed by Chinese personnel. Dr. Wu was appointed as its first director. National Quarantine Service enabled the Chinese government to regain quarantine control of all major ports in China. The National Quarantine Service was linked by cable to the League of Nation's Eastern Bureau of the Health Service, and weekly reports were sent to the League's Epidemiology Section. Following this, Wu was made a member of the Advisory Board of the League's Far Eastern Epidemic

Bureau[61]. Civic engagement of anti-infective diseases has broadly practice in modern time. For example, Schistosomiasis is regarded as the most serious parasitic disease in China. In the early 1950s, in the area of the Yangtse valley and the rich lands to the south, it has revealed over 11 million persons infected, and local infection-rates ranging from 10% to 70%[62]. Large-scale epidemiological surveys have been carried out by Chinese scientists to determine the incidence, prevalence, and intensity of S. Japonicum infections since 1949[63]. It is a large-scale campaign to control the disease because it threatens more than 30 million people in China. Infection remains a major public health concern despite half century of intensive control efforts. It is estimated that 865,000 people and 100,250 bovines are today infected in the provinces where the disease is regional, and its transmission continues in twenty year ago[63]. 1700 cases were dead in 2013[64]. It is still life threatening accordingly [65]. China enact Law of the People's Republic of China on the Prevention and Treatment of Infectious Diseases [Revised]中华人民共和国传染病防治法 [已被 修订] in 1989. We think that China took lesson from SARS in 2003. Recently, blame China's lack of transparency is nothing new for SARS and also for present COVID-19. "SARS challenged the political and public health systems of all affected countries. It demanded rapid and decisive action to be taken, yet the comparison shows how difficult this was for an unknown new disease. Guangdong reacted rapidly but this pace was not continued by China for some time, which facilitated national and international spread. Once the Chinese government changed its policy, it developed an impressive control strategy involving the public which culminated in containment. The significance of timely information was perhaps the main lesson which the SARS epidemictaught" [66]. People survived and controlled SARS, at least they have built alarm system and related regulation. Now, Chinese can condemn any bureaucracy if government missed report for epidemic warning. China was shocked by the burst of COVID-19 pandemic. But government made quickly decision, lockdown Wuhan. More than 4200 healthcare workers and over 4000 military doctors and nurses totally went to Wuhan and Hubei. A huge number of volunteers and tons of supporting cargos have been transported to the region. Tremendous donations were raised for helping. To clear patients from home is a so challenge job, but the member of neighborhood committee and staff of community residential office efficiently helped healthcare workers to visit each family door by door. All of patients and suspected persons have been tested. Confirmed diagnostic cases have been moved to hospital and treated. The visitors and strangers should be registered after lockdown. We believed that the civic organization of self-administration play an important role in the COVID-19 pandemic. Maybe it is still too early to make a conclusion. All measures for lockdown in China can be accept by most of citizens.

In conclusion, we briefly reviewed the history of the community committee. The cultural background and history of public health crisis are still consistently remained in the modern community committee and village committee in China. And then we reviewed that Wu Lien-teh confronted the epidemic crisis with many measures such as lockdown, quarantine, the wearing of mask, setup mobile hospital, travel restriction, the cremation of victims, and border control. These measures also have been taken in the COVID-19 plaque in Wuhan and Hubei province as well as other regions in China. Chinese individual relies on the culture community which form a partnership with the governmental organizations. The confrontation of the crisis mobilizes inward Chinese nationalism from all of the scales, although the seeking personal freedom is a mainstream trend in modern society. That stay home contributes to fight the plaque became a social action to help to

control the COVID-19 pandemic in China. The immediate response to quarantine and insolation cooperated with a national administrative action. We think that the COVID-19 pandemic as a historical special event mobilized an awareness of collectivism. It is a cultural minding and cultural collectivism that rooted in many Chinese. It reflects a collective responsibility of each of Chinese to fight against the COVID-19 plaque.

Author Huibing Tan personal statement:

Wuhan is my home town. My mother was a doctor in Department of Infectious Diseases in her earlier career and also worked in division of respiratory in a specialist hospital of infectious diseases for many years. I had a MD degree. PhD degree was completed in the Peking Union Medical College found by the Rockefeller foundation (the US) suggested by Dr. Wu Lien-teh[67]. In my earlier medical education, I took special lesson of prevent of infectious diseases. The isolation, lockdown and quarantine were taught the classes. I have a mind for preparation of the pandemic situation. My dad was a resident in Wuhan and used to elect as a building leader. My dad is living in Wuhan alone in his own home. The community residential office distributed some food and other grocery to my dad for free. My sister and brother should show their ID to community residential office or doorman for each visiting to my dad home. I have friends working in the neighborhood committee and Community residential office in Beijing. One of them is my comrade in democratic league and changed her job title as staff or manager of neighborhood committee in Beijing. I used to live in a city for many years, one day I got a notice informed me to show up in the local policy station, but I was busy for working never to show up to any policeperson until I left. I think some people are not happy with the registration system. However, I am fully sure the registration also helped a lot for fighting COVID-19.

CONFLICT OF INTERESTS

The authors have no conflicts of interest to declare.

Reference:

- [1] W. Soon, Science, Medicine, and Confucianism in the Making of China and Southeast Asia—Lim Boon Keng and the Overseas Chinese, 1897–1937, Twentieth-Century China, 39 (2014) 24-43.
- [2] X. Wu, H. Yan, Y. Jiang, How are New Community Governance Structures Formed in Urban China?: A Case Study of Two Cities, Wuhan and Guangzhou, Asian Survey, 58 (2018) 942-965.
- [3] S. Jiang, K.C. Land, J. Wang, Social ties, collective efficacy and perceived neighborhood property crime in Guangzhou, China, Asian Journal of Criminology, 8 (2013) 207-223.
- [4] L. Tomba, The government next door: Neighborhood politics in urban China, Cornell University Press2014.
- [5] T. Heberer, Evolvement of citizenship in urban China or authoritarian communitarianism? Neighborhood development, community participation, and autonomy, Journal of Contemporary China, 18 (2009) 491-515.
- [6] Q. Xu, D.D. Perkins, J.C.-C. Chow, Sense of community, neighboring, and social capital as predictors

- of local political participation in China, American journal of community psychology, 45 (2010) 259-271.
- [7] W. Liu, J. Zhang, B. Bluemling, A.P. Mol, C. Wang, Public participation in energy saving retrofitting of residential buildings in China, Applied energy, 147 (2015) 287-296.
- [8] K. Woodman, Local citizenship and socialized governance: linking citizens and the state in rural and urban Tianjin, China, University of British Columbia, 2011.
- [9] R. Benewick, I. Tong, J. Howell, Self-governance and community: A preliminary comparison between villagers' committees and urban community councils, China Information, 18 (2004) 11-28.
- [10] L. Jiayan, Urban Community Planning in the Context of Transition in China: Theory Interpretation and Practice Exploration Based on Relationship Reconstruction, DOI (2017).
- [11] J. Howell, Prospects for village self governance in China, The journal of peasant studies, 25 (1998) 86-111.
- [12] X. Zhang, Z. Li, Rural Governance in China: Review and Outlooks, China's Rural Development Road, Springer 2018, pp. 167-179.
- [13] K.J. O'brien, L. Li, Accommodating "democracy" in a one-party state: Introducing village elections in China, The China Quarterly, 162 (2000) 465-489.
- [14] 武乾, 南京国民政府的保甲制度与地方自治, 法商研究-中南财经政法大学学报 (法学版), DOI (2001).
- [15] 谢增寿, 国民党南京政府保甲制度述论, 西华师范大学学报 (哲学社会科学版), DOI (1984) 3.
- [16] Z. Yi, Dilemma of Baojia in the Rear Area during the Anti Japanese War——A Case Study of the Military Service Disputes and Solutions in Nanxi County, Sichuan Province, Journal of Southwest Jiaotong University (Social Sciences), DOI (2014) 8.
- [17] C. Lei, On the Relation Between the New County System and the Local Autonomy of the Kuomintang (KMT), Journal of Fuyang Teachers College (Social Science Edition), 4 (2006).
- [18] S. Cheng-fei, The Congress of the Villagers in a Bao and the Mobilization at Grass Root Level During the War of Resistance in Guangdong [J], Journal of Sun Yatsen University (Social Science Edition), 6 (2007).
- [19] W. You-qing, Research on Tan Kemin and the New County System Reform in Guizhou Province during the Anti-Japanese War Period, Guizhou Culture and History, DOI (2013) 17.
- [20] L. Yong-gang, The Grass-roots Government Establishment and Social Control in Yunnan Province under Long Yun, Journal of Minzu University of China (Philosophy and Social Sciences Edition), DOI (2013) 19.
- [21] 姚人多, 政權轉移之治理性: 戰後國民黨政權對日治時代保甲制度, Taiwanese Sociology, DOI (2008) 47-108.
- [22] M. Tian, The Baojia System as Institutional Control in Manchukuo under Japanese Rule (1932-45), Journal of the Economic and Social History of the Orient, 59 (2016) 531-554.
- [23] Z. De-xin, The use of the Baojia System of the Japanese Puppet Regime by the CPC in eastern Hebei Province during the Anti-Japanese War [J], Historical Research in Anhui, 3 (2010).
- [24] Z. De-xin, Concealing Colonial Rule with Local Characteristics——Domination of the Rural Areas of Eastern Hebei Province During the Japanese Occupation, Journal of Historical Science, 5 (2010).
- [25] W. Xian-ming, From Autonomy to the Bao-Jia System: the Question of the Historical Restoration in the Re-constitution of the Systems of Countryside——On the Sphere of Huguang's Country Society in 1930's and 1940's [J], Journal of Historical Science, 2 (2008).
- [26] 张维迎,邓峰,信息,激励与连带责任——对中国古代连坐,保甲制度的法和经济学解释,中国社会科学,3 (2003) 51-56.

- [27] Y. Huan-peng, The Bao-Jia System in the Autonomy Movement of Villages and Towns after the War [J], Agricultural History of China, 3 (2004).
- [28] Y. Pan, Traditional Welfare: Family and Community the State and Welfare Thoughts, Rural Welfare in China, Springer2017, pp. 29-38.
- [29] J. Liying, The study on family punishment in Qin and Han dynasty, Journal of Capital Normal University (Social Sciences Edition), DOI (2008) 5.
- [30] C. Zhou, Optimal size of rebellions: Trade-off between large group and maintaining secrecy, Available at SSRN 2796810, DOI (2019).
- [31] X. Deng, L. Zhang, A. Cordilia, Social control and recidivism in China, Journal of Contemporary Criminal Justice, 14 (1998) 281-295.
- [32] S. Naquin, Peking: temples and city life, 1400-1900, Univ of California Press2000.
- [33] J. Friedmann, Four theses in the study of China's urbanization, International journal of urban and regional research, 30 (2006) 440-451.
- [34] D. Han, The hukou system and China's rural development, The Journal of Developing Areas, 33 (1999) 355-378.
- [35] M. Dutton, Policing the Chinese household: a comparison of modern and ancient forms, Economy and Society, 17 (1988) 195-224.
- [36] D. Bray, Social space and governance in urban China: The danwei system from origins to reform, Stanford University Press2005.
- [37] H. Toby, A Letter from China: Social Control in China—A Formal or an Informal Mechanism?, Crime Prevention and Community Safety, 3 (2001) 71-85.
- [38] 沈美华, 日本对台湾的殖民统治政策及其影响, 2007.
- [39] 赵新良,晚清时期澳葡政府对澳门华人的管治及华人反应,暨南大学,2010.
- [40] 陈文源, 明清时期广东政府对澳门社会秩序的管理, 2012.
- [41] A.J. Joes, Jeffrey P. Kimball, To Reason Why: The Debate about the Causes of US Involvement in the Vietnam War, Journal of Conflict Studies, 11 (1991).
- [42] 杨爱平, 余雁鸿, 选择性应付: 社区居委会行动逻辑的组织分析, 社会学研究, 4 (2012) 1-23.
- [43] 张丽霞, 谢霄, 北京: 持有社工职业水平证书的社区工作者享受专技等级工资, 中国社会工作, DOI (2016) 4-4.
- [44] 吴春国, 社区专职工作者工资福利待遇有了明确标准, 社区, DOI (2008) 24-25.
- [45] 孙旭友, 去人情化: 新一代社区工作者的治理倾向和社区 "脱域" 策略, 社会工作与管理, 16 (2016) 49-55.
- [46] 杨青山,居委会选人用人应把握 "五关",社区,DOI (2003) 19-19.
- [47] 张延春, 金水社区选聘 110 名楼栋长, 社区, DOI (2014) 36-36.
- [48] 孙小逸, 黄荣贵, 制度能力与治理绩效——以上海社区为例, 公共管理学报, 4 (2012) 29-38.
- [49] 李辉, 社会报酬与中国城市社区积极分子, 社会, 1 (2008) 117.
- [50] 梁震宇, 社区卫生服务入户十项注意, 中国社区医师, 18 (2002) 3-3.
- [51] E.H. Johnson, Neighborhood and the Police: The People's Republic of China, International Journal of Comparative and Applied Criminal Justice, 7 (1983) 209-215.
- [52] S. Tynen, State territorialization through shequ community centres: bureaucratic confusion in Xinjiang, China, Territory, Politics, Governance, 8 (2020) 7-22.
- [53] L. Huigang, X. Xiaowei, H. Cui, M. Haixia, Y. Zhiming, A brief history of the development of infectious disease prevention, control, and biosafety programs in China, Journal of Biosafety and Biosecurity, DOI (2020).

- [54] C.F. Nathan, The North Manchurian Plague Prevention Service, 1911-1931, Brill1967, pp. 42.
- [55] W.L. Teh, Plague in the Orient with special reference to the Manchurian outbreaks, Epidemiology & Infection, 21 (1922) 62-76.
- [56] M.E. Levison, Lessons learned from history on mode of transmission for control of pneumonic plague, Current infectious disease reports, 2 (2000) 269-271.
- [57] Q. Zhang, F. Zhang, B. Yang, Pneumonic plague epidemic in Northeast China in 1910–1911: Dr. Wu Lien-Teh's epidemic preventive system for plague control, Frontiers of medicine, 12 (2018) 113-115.
- [58] Q. Zhang, Y. Liu, P.E. Ratmanov, F. Zhang, Pneumonic Plague Epidemic in Northeast China 1910–1911 and Dr. Wu Lien-Teh's Great Contribution, DOI (2018).
- [59] L. Goh, T. Ho, K. Phua, Wisdom and Western Science: The Work of Dr Wu Lien-Teh, Asia Pacific Journal of Public Health, 1 (1987) 99-109.
- [60] C.P.C.R.C.o.P.o. London, Views of Harbin (Fuchiatien) taken during the plague epidemic, December 1910 March 1911, DOI.
- [61] S. Yang, Dr Wu Lien-teh and the National Maritime Quaritine Service of China in 1930s](Chi), Zhonghua yi shi za zhi (Beijing, China: 1980), 18 (1988) 29.
- [62] B. Maegraith, SCHISTOSOMIASIS IN CHINA, The Lancet, 271 (1958) 208-214.
- [63] D.P. McManus, D.J. Gray, Y. Li, Z. Feng, G.M. Williams, D. Stewart, J. Rey-Ladino, A.G. Ross, Schistosomiasis in the People's Republic of China: the era of the Three Gorges Dam, Clin Microbiol Rev, 23 (2010) 442-466.
- [64] Z. Lei, H. Zheng, L. Zhang, R. Zhu, Z. Xu, J. Xu, Q. Fu, Q. Wang, S. Li, X. Zhou, Endemic status of schistosomiasis in People's Republic of China in 2013, Zhongguo xue xi chong bing fang zhi za zhi= Chinese journal of schistosomiasis control, 26 (2014) 591-597.
- [65] G.M. Williams, Y.-S. Li, D.J. Gray, Z.-Y. Zhao, D.A. Harn, L.M. Shollenberger, S.-M. Li, X. Yu, Z. Feng, J.-G. Guo, J. Zhou, Y.-L. Dong, Y. Li, B. Guo, P. Driguez, M. Harvie, H. You, A.G. Ross, D.P. McManus, Field Testing Integrated Interventions for Schistosomiasis Elimination in the People's Republic of China: Outcomes of a Multifactorial Cluster-Randomized Controlled Trial, Frontiers in Immunology, 10 (2019).
- [66] A. Ahmad, R. Krumkamp, R. Reintjes, Controlling SARS: a review on China's response compared with other SARS affected countries, Tropical Medicine & International Health, 14 (2009) 36-45.
- [67] Y.-l. Wu, Memories of Dr. Wu Lien-teh, plague fighter, World Scientific1995. 2929

Note of social media:

Brenda Goh (edited by Tony Munroe & Simon Cameron-Moore), Lockdown lifted, Wuhan's residence committees keep watch. National Post. April 16, 2020 12:54 AM EDT. https://nationalpost.com/pmn/health-pmn/lockdown-lifted-wuhans-residence-committees-keep-watch

Rebecca Kanthor, A New Generation of Volunteers Emerges in the Chinese City at the Epicenter of the Coronavirus Crisis. TIME. Shanghai February 24, 2020, https://time.com/5789530/wuhan-volunteers-coronavirus-covid-19-china/

Zhang Rui, COVID-19 outbreak: A volunteer's story in Wuhan, China.org.cn, March 3, 2020, http://www.china.org.cn/china/2020-03/03/content 75769539.htm

Coronavirus outbreak: Wuhan volunteers disinfect city as officials begin to ease lock down, https://globalnews.ca/video/6773487/coronavirus-outbreak-wuhan-volunteers-disinfect-city-as-officials-begin-to-ease-lock-down

Chao Deng, In Wuhan, China's Virus Outbreak Overwhelms Residential Committees, The Wall Street Journal. Feb. 14, 2020 4:50 pm ET https://www.wsj.com/articles/in-wuhan-chinas-residential-committees-fight-outbreak-on-front-line-11581717012

Paul French, In 1911, another epidemic swept through China. That time, the world came together. CNN. Updated 12:30 AM ET, Sun April 19, 2020. https://www.cnn.com/2020/04/18/china/great-manchurian-plague-china-hnk-intl/index.html