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Public resistance against the anti-schistosomiasis campaign of the 1950–1960s in China*

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Abstract

This article examines the anti-schistosomiasis campaign of the 1950–1960s from a new perspective, based on three historical sources from the central and local governments: the People's Daily, Xuefangshi (anti-schistosomiasis records) and the learning documents from a brigade of Hubei province of 1964. The main impetus for eradicating schistosomiasis was to increase agricultural production and mobilize the people to actively participate in local construction projects. While existing literature on the campaign focuses on propaganda and government motivations, this article aims to build on this body of work by investigating how the central government of the People's Republic of China promoted the three-day antimony potassium tartrate (APT) treatment and why villagers resisted the campaign. The People's Daily offers the central government's point of view, promoting the idea that the disease could be cured and that the three-day APT treatment, designed to shorten treatment period and lessen medical expense in comparison to long-term APT treatment, was safe and effective. However, Xuefangshi and the learning documents revealed that the villagers were not willing to undergo the three-day APT treatment because of their concern about medical expenses, the possibility of losing work points and agricultural production; the villagers devised creative ways of avoiding the treatment and providing fecal samples for examination. In addition, it was difficult to convince villagers to consent to hospitalization, though the central government advertised widely that the disease could be cured and that the three-day treatment was successful. This article also uses the health behavior model to explore the villagers' behaviors with regard to avoiding the treatment. It concludes that although the central government promoted the treatment, the villagers did not respond well to the campaign.

Keywords

Anti-Schistosomiasis Campaign, antimony potassium tartrate, China, People's Daily, schistosomiasis

Introduction

Schistosomiasis (also known as bilharzia or snail fever) has plagued China for over 2,000 years, according to archaeological evidence from corpses (Gross and Fan 2014). The schistosome species that is most commonly found in China is *Schistosoma japonicum* – a water-borne and snail-transmitted parasite. This species is prevalent in eleven provinces along and south of the Yangtze River: Anhui, Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang and the suburbs of Shanghai.

As of 1949, the central government of the People's Republic of China (PRC) had known that the disease was widespread in the southern region. Around 1955, Chairman Mao Zedong (1893–1976) and the leaders of the central government realized that the disease had undermined the success of the first five-year plan to increase agricultural production. Patients who were affected were unable to work, female patients were rendered infertile and children who were affected exhibited dwarfism. It was believed that these effects would obstruct the process of industrialization. In 1955, Chair-

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man Mao, considering the schistosomiasis epidemic to be an important national issue, proposed a national prevention program to fight the disease. Widespread mobilization, along with effective agricultural and water conservation projects, was used to control the disease (Fan and Lai 2008). By the mid-1960s, the number of infected people had dropped (Dirk et al. 2005, p. 67–68; Farley 1991, p. 201–215). These events have been described as "the return of the plague spirit", alluding to a poem entitled "Song wen shen" ("Farewell to the Plague Spirit") written by Chairman Mao in 1958.

Chairman Mao initiated the anti-schistosomiasis campaign and announced that the disease must be eliminated within seven years, starting from 1955. The campaign was promoted across the nation with the help of such tools as handbooks, posters, publicity slogans, booklets and films (Fan 2010). In order to eradicate the disease in localities at the province level, anti-schistosomiasis stations were set up in production brigades, communes and counties.

There were two main characteristics of the campaign. First, it was aimed at increasing agricultural production. To this end, it was integrated with local construction projects to eradicate snails, by establishing new water channels and blocking old water channels, in order to interrupt the transmission of the disease. Second, it mobilized the populace to voluntarily participate in promotional activities and local construction projects (Fan and Lai 2008; Fan 2010). During this period, many locals were forced to participate in the campaign. In fact, the focus of the campaign was to eradicate snails, prevent the disease and mobilize the populace for agricultural production. Previous scholarly works focus on preventive methods, promotion, mass mobilization, and the campaign process. However, it is not clear how and why the villagers resisted the campaign. The official news reports consistently state that the villagers participated enthusiastically in the campaign and were involved in its success. An indicator of the success of the campaign was the mobilization of the local population to be involved as much as possible in construction work and capturing the snails.[1] In addition, the anti-schistosomiasis stations that were set up also provided medical treatment to schistosomiasis patients and educated people on how the disease could be prevented. This article aims to investigate how the central government promoted the three-day antimony potassium tartrate (APT) treatment and why villagers from a brigade of Hubei province resisted the campaign, especially the three-day APT treatment.

[1] In 1956, students, peasants and factory workers were mobilized for snail eradication. They captured a load of snails weighing around 10,000 kilograms in Kunshan City (Record of the prevention... 1995, p. 77); 59,500 kilograms of snails were captured in Anhui Province (Record of the prevention... 1990, p. 84).

Literature Review and Sources

The control of schistosomiasis is currently a major issue in China. The anti-schistosomiasis campaign was a national campaign under Mao's regimen. Recently, English-language publications have examined the campaign from a historical perspective. An article by F.R. Sandbach briefly discusses the strategies and promotional methods used in the campaign and draws upon common resources to discuss the campaign (Sandbach 1977). Further, Kenneth Warren comments that the remarkable success achieved in controlling the disease was attributable to the personal interest of Chairman Mao and the mobilization of the people, rather than the efforts of health officials and scientific experts (Warren 1988). Warren's conclusion implies that scientific and medical experts did not play an important role in controlling the disease in the campaign.

Fan Ka-wai and Lai Hon-kei have explored the historical context of the anti-schistosomiasis campaign and the reasons why Mao launched it. Their article considers the relationship between Mao's promotion of the campaign and the agrarian policies of the time, as well as the relationship between the campaign and the failure of the first five-year plan. It offers an explanation of why Mao viewed schistosomiasis as a major nationwide issue rather than a local problem (Fan, Lai 2008). On the other hand, how did the local people deal with a national campaign? They simply followed the central government's policy or resented the campaign.

Drawing on what happened in the Jiaxing and Haining Counties, Li Yushang views the anti-schistosomiasis campaign as a political movement and discusses the disease elimination strategies between 1948 and 1958; in particular, Li notes that political intervention complicated the campaign (Li 2010). Considering the archives and the three areas of urban Shanghai–Qingpu County, Jiangsu Province (a district of Shanghai in 1958) and rural Yujiang County in Jiangxi Province – as case studies, Miriam Gross's book gives an overview of the campaign and explains why top leaders were concerned about the disease. It discusses the campaign during 1949–1955, 1955–1958, 1959–1965 and 1966–1971. The second section examines the role of leaders in both the central and local governments in the campaign and illustrates the social and economic difficulties faced by leaders in promoting the campaign. The third section discusses the methods used to educate the populace as well as preventive and treatment practices. Gross emphasizes that people were not willing to participate in the campaign and resisted its policies. During the Cultural Revolution, the campaign succeeded because treatment was almost universal, resistance decreased and educated young people and professional physicians were sent to rural areas rather than included in prevention efforts. The final section examines various non-health–related

benefits to the state that resulted from the campaign, including eradication of traditional cultural practices and superstitions and the introduction of scientific consolidation (Gross 2016).

Mao believed that mass participation could help promote political awareness and politicize the public (Townsend 1969). The central government considered mass mobilization across the nation to be crucial for disease control. Mao emphasized that the first step in mobilizing the masses was to introduce propagandistic and educational materials (Handbook for the campaign... 1960, p. 19–20). These materials were used to disseminate the ideologies of the ruling party and promote them to the populace. However, in the above-mentioned scholarly works, there is very little focus on the actions that the populace took against the campaign.

In the 1950s, it was estimated that over ten million people were infected with the disease (Cheng 1971). Most were in the terminal stage, as indicated by their large bellies. Schistosomiasis control was being implemented widely, as there was an urgent need for a cure or the patients would be unable to work and would die. If they could be cured, they would become healthy again and would be able to return to work. In general, the patients would seek treatment as soon as possible when they were sick. At that time, it was not easy to cure patients who were in the terminal stage or suffering an acute form of the disease. What difficulties did the central government face with regard to providing medical treatment? APT was popular as a cure for the disease before the 1970s. However, there were common side effects and even toxicity as a result of repeated exposure and overdosing. Around 1957, the central government promoted three-day APT treatment. However, the populace did not believe in the safety of the treatment, and refusal of the treatment was not uncommon. In this article, the highly popular health belief model (HBM) will be used to examine the rejection of the three-day APT treatment by the populace.

This article will use three types of historical sources to examine how the three-day APT treatment was promoted by the central government, and how and why the populace resisted it. However, it will not investigate the effectiveness of the three-day APT treatment from the medical and clinical perspective.

1. *People's Daily* (*Renmin ribao*): The author collected data from news reports in the *People's Daily* regarding the three-day APT treatment. The *People's Daily* is the most important newspaper in PRC. The news reports in it represent the official viewpoints of the central government. Therefore, these data provide insight into the promotional focus of the central government. Although the news reports in this newspaper are unavoidably selective and do not tell readers the true story, they accurately and reliably reflect China's official viewpoints.

2. The anti-schistosomiasis records (*Xuefangzhi*): The central government urged provincial governments, communes and brigades to be involved in the campaign against the disease. Anti-schistosomiasis records contain various types of information about the disease. Most of these materials were for "internal use only". That is, they were not formally published and circulated, nor do they have publication data such as dates and places. They were usually published by the local Department of Health or The Leading Group Office for Schistosomiasis Control and only served as references for local departments (Fan 2008). These records include data useful for understanding how provinces, counties, cities, communes, and brigades went about preventing and treating the disease and educating people.

3. Local archives of the anti-schistosomiasis campaign: Local governments at different levels store the archives of the anti-schistosomiasis stations or related organizations. During the Great Leap Forward (1958–1960), the anti-schistosomiasis campaign was suspended. In December 1963, the committee called the 9th national meeting for preventing schistosomiasis in Shanghai. After the meeting, in order to publicize its success, the local communes provided documents recording the campaign strategies. At the time, it was common to provide models for learning in PRC. The author of this article collected a set of 1964 learning documents from the anti-schistosomiasis station of Hanyang County, Hubei Province. The documents written by the communes or production brigades recorded their experience with implementing anti-schistosomiasis policies. An examination of the documents revealed the difficulties faced in implementing the campaign.

Antimony Potassium Tartrate: From long-term to short-term treatment

In 1918, a British doctor named John Brian Christopherson discovered that APT could be used to cure schistosomiasis, and since then, this method has been widely used (Crichton-Harris 2009). However, in the 1970s, praziquantel replaced APT as the most common drug to cure schistosomiasis (McManus et al. 2009).

APT treatment was divided into long-term and short-term treatment. Long-term treatment was also called twenty-day APT therapy: the total dose would be divided into 20 portions and administered over 20 days. The maximum dose was 1.5 g in male patients and 1.3 g in female patients. So, if the dose was 25 mg/kg in a patient weighing 50 kg, 62.5 mg would be administered every day for 20 days (Ministry of Health 1964, p. 107). In 1956, the national conference for the prevention of schistosomiasis took place in Shanghai. The anti-schistosomiasis committee accepted a recommendation for short-term treatment, in which the same treatment was administered over three days instead of twenty (It was decided to promote APT 1956). It was at this time that

the three-day APT treatment was officially adopted. Medical expert Brian Maegraith, who visited China in 1958 to study the disease, stated that the drugs used to treat schistosomiasis were toxic and serious side effects could develop even with carefully graded dosage. The seven-day and twenty-day regimens were the most common therapeutic courses (Maegraith 1958).

In the short-term three-day treatment, a fixed dose was intravenously injected six or seven times in the morning or afternoon for three days. The maximum dose per day was 0.7 g (Ministry of Health 1964, p. 107). The twenty-day treatment and three-day treatment were suitable for people of different constitutions. The three-day APT treatment could not be used in people of weak constitution or in people with serious diseases, or in patients with antimony poisoning or Adams-Stokes syndrome. If the patients given the short-term treatment were not cured immediately, they could die as a result of the toxicity of the high dose administered over a short time. In instructions from the State Council dated 20 April 1957, Premier Zhou Enlai highly recommended the three-day APT treatment on the grounds that it could reduce the burden on the patients, had a higher success rate (it had cured over ten million people since its initiation) and also allowed patients to resume their work (Eliminating schistosomiasis resolutely 1957). Although the three-day APT treatment was not safe, it could shorten the treatment period from twenty days to three days. Hence, the patients could start working sooner and the medical expense was lower. In the 1950–1960s, both the central and local governments were faced with the challenge of accomplishing the political goal (which was to increase agricultural production) under difficult economic conditions. The three-day APT treatment could help them achieve this goal quickly and within their economic means. Donglan county in Guangxi province recorded an interesting figure: patients receiving the twenty-day APT treatment were hospitalized for 20–25 days, while patients receiving the three-day APT treatment stayed for 5 or 6 days. Thus, by undergoing the three-day treatment, patients could reduce their hospitalization period by 15 days (Lo 1958, p. 47–55). On the other hand, the state would provide a subsidy of 1 dollar to patients receiving the three-day APT treatment and 2 dollars to patients undergoing the twenty-day APT treatment (The Anti-schistosomiasis Station of Hanyang 1964, p. 72). The three-day APT treatment could also reduce the burden on the state.

News reports on APT in the People's Daily

In 1955, Chairman Mao announced that "Schistosomiasis had to be eliminated". Since 1956, the central government had focused on promoting the three-day APT treatment, which was regarded as the best solution for schistosomiasis patients. From 1950 to 1979, there were 29 reports about APT treatment, and it was most frequently reported in the 1950–1960s, when the campaign was at its peak, according to the author's statistics. After the start of the Cultural Revolution (1967), the campaign was suspended. News reports related to the three-day APT treatment also disappeared.

It was estimated that over ten million people were infected by the disease (Cheng 1971). Apart from stopping the spread of the disease, there was still the question of how schistosomiasis patients could be cured and regain their ability to work. This was an important issue. Chairman Mao set a goal to eradicate the disease within seven years, but it was impossible, as neither the central nor local governments had much money to invest in eradicating the disease. The central government did what it was good at by providing the masses with political and ideological education. In reality, there was a lack of professionally trained doctors (referred to as "Western doctors" in China, and used to allude to doctors trained in biomedicine). Moreover, there was a severe shortage of healthcare workers and good medical facilities in the infected areas. Therefore, although the authorities would have liked to cure all schistosomiasis patients, it was not practical. However, the populace was officially informed that (1) the disease could be eradicated and (2) patients could be cured (Mao 1955, p. 117–119). How did the People's Daily report these two official messages?

Beginning in 1958, the reports of the People's Daily covered the two main messages as follows: First, the reports pointed out the misinformation propagated by healthcare staff about the effectiveness of APT treatment. The newspaper verified that the APT success rate was 60% and that medical staff were hesitant to use APT because they were unsure of its effectiveness and wary of its side effects and high disease recurrence rate (A few questions... 1956). Therefore, they were not very confident of APT's ability to cure patients. In reality, they did not follow the rigorous treatment procedure. The reports emphasized that although APT could be cured, its side effects were overwhelming. It was estimated that there were 2.5 million schistosomiasis patients in the late stage of the disease, accounting for 25% of all schistosomiasis patients (A few questions... 1956). The reports also criticized the medical staff for giving up on patients in the late stage, as a result of which the disease was not able to be eradicated within seven years (A few questions... 1956).

With the help of many reports about cases successfully cured by APT, the central government led the people to believe that the disease could be cured. The typical promotional cases reported are described here. In Wucheng town in Jiangxi province, a clinic was set up to accommodate 30 schistosomiasis patients in 1955. After one month, all the patients had recovered.

A female farmer had had the disease for eight years and could not walk or work. She was given APT treatment, after which her liver and spleen started to function again and her ascites subsided. Her body was healthy and she could carry a 50-kg load (The masses welcomed a committee... 1956). On the other hand, 272 schistosomiasis patients were cured over a period of seven months by a staff of seven: two doctors, one fecal inspector, three healthcare staff and one utility man. All members of the staff responsibly took care of the patients day and night, and their tasks included APT administration and fatigue duty (The masses welcomed a committee... 1956). With the help of such reports, the government hoped that the populace would believe that schistosomiasis could be prevented, cured and eliminated.

From 1955 to 1956, the third hospital of Hangzhou city used APT to cure a total of 200 schistosomiasis patients (The third hospital of Hangzhou city... 1956), proving that APT was an effective treatment. These reports indicated that the central authority depended on the use of APT to cure schistosomiasis. During the same period, the Ministry of Health attempted grandiose strategies to impress the central leaders. The central authority wanted to cure schistosomiasis patients and ensure that they were able to work again as soon as possible. Some leaders and medical experts proposed shortening the APT period from twenty days to three days or even two or one. The goal was to reduce the financial burden on the state. In 1956, the national conference on schistosomiasis treatment made a decision to use APT treatment, but they also determined that the twenty-day period was too long (The national meeting... 1956). The conference participants studied the reports about the three-day APT treatment and confirmed that the treatment was safe and effective. Because the sample size was small, they decided to conduct more in-depth research (The national meeting... 1956).

Unfortunately, the reports that appeared in the newspaper only mentioned that the Scientific Committee for the Prevention of Schistosomiasis had decided to promote the three-day APT treatment after the national conference for schistosomiasis treatment. The conference concluded that the findings of the scientific investigation on the use of APT confirmed that the researchers and scientists had made a breakthrough in APT treatment of schistosomiasis. These reports repeatedly mentioned the benefits of the three-day APT treatment. Meanwhile, the three-day APT treatment was proven to be more effective than the twenty-day treatment. The shorter treatment could reduce the patients' pain as well as medical expenses. Therefore, the three-day APT treatment was promoted on tour and used in clinics.

In 1959, it was reported that over 3 million schistosomiasis patients had been cured with the three-day APT treatment. This treatment was used nationwide as a substitute for the twenty-day treatment. The death rate associated with the three-day APT treatment was only 0.005%. The treatment was also reported to reverse dwarfism in children affected by schistosomiasis, as well as the female infertility associated with the disease. Moreover, patients with cirrhosis of the liver associated with schistosomiasis also recovered (Medical science... 1960). The aim of the central authority was to create a positive impression of the treatment by showing that it could cure the disease as well as problems with agricultural production, as schistosomiasis patients who were cured could work again after treatment.

All these reports provided only the information that the central government wanted to convey to the populace. It was difficult to believe that the three-day APT treatment was so effective. The People's Daily never reported any cases in which patients had died after APT treatment, and they tended to underrate the side effects of APT.

On the other hand, the reports stated that the side effects of APT could be moderated by Chinese medicine. One of the most important health policies proposed by Chairman Mao was the integration of Chinese and Western medicine (Taylor 2005). The central government advocated that Chinese medicine should play a crucial role in curing disease. Chinese medicine, including Chinese herbs and acupuncture, was used to cure schistosomiasis patients, and it was shown by experts that Chinese medicine could reduce the side effects of APT. A report demonstrated that two research groups (from Yueyang county and Yuanjiang county) used APT and the Weiling decoction (a Chinese medical treatment) to cure 290 patients. The results verified that the three-day APT treatment was safe and that the Weiling decoction could eliminate ascites. Over 4,000 patients were cured by the combined treatment throughout the country (Schistosomiasis research... 1956; An effective Chinese medicine... 1956). In order to offer better service to the peasants, some local authorities set up mobile hospitals to provide traveling medical services (People of Zhejiang... 1956). APT combined with Chinese herbs and acupuncture became the main method for curing patients. Chinese medical physicians of Zhejiang province promulgated their own 150 secret prescriptions to cure the disease, and the Chinese medical clinic of Hongzhou city also produced Chinese medical pills for the disease. The doctors of the first hospital of Zhejiang province conducted research on an antidote against APT (People of Zhejiang... 1956). Furthermore, the central authority confirmed that acupuncture could reduce the body's reaction to the APT injection. Thus, Chinese medicine was officially accepted as an adjuvant treatment to APT that was both safe and practical. The official promotional program encouraged the local units to use Chinese medicine. However, most Chinese medical treatments had not been thoroughly tested or verified. If these treatments had indeed been able to cure schistosomia-

sis, the populace would undoubtedly have received the treatment and a large number would have been cured. Interestingly, the figures in the local records present a different picture, as they show that the local authorities faced many difficulties in implementing the three-day APT treatment that the central government did not acknowledge, and that the patients refused to receive APT treatment.

Local reports on APT treatment

Injecting APT increases the blood Sb (Antimony) level in a short time and consequently kills Schistosoma japonicum. In 1956, the three-day APT treatment was still being adopted and seemed to be popular, in part because it greatly reduced the period of treatment compared with the twenty-day treatment. The reason for promoting this short-term treatment was that there were a large number of patients to be cured. Unfortunately, the three-day APT treatment did not have much support from evidenced-based medicine; its aim was simply to quicken the pace of the treatment. According to evidence from Guangdong province, the three-day APT treatment had cured 29,000 patients in 12 months. This was a great record for Guangdong province. However, Guangdong province also recorded that the incidence of Adams–Stokes syndrome was 14.4/10,000 and that the death rate associated with it was 41% (Huang 2005, p. 75–80). Obviously, the local governments had contradictory data that they did not publicize during the 1950–1960s. Needless to say, the three-day APT treatment was not suitable for all patients, especially because APT was injected into the body within such a short period of time. The Collected Materials of Schistosomiasis published in 1952 points out that APT should be used with caution. In fact, some experts had proven that 10% of patients were not suited to short-term APT treatment and would benefit more from twenty-day APT treatment (Section of Epidemic Prevention 1952, p. 178–184). Thus, it seems that although medical experts were aware of the dangers of short-term APT treatment, they did not voice their concerns about it when the central government promoted the three-day APT treatment.

According to data from Ningguo county in Anhui province, twenty-day APT treatment was used during 1953–1956 with no reports of deaths. During 1957–1958, 8,770 patients received three-day APT treatment and 4,231 patients received twenty-day APT treatment, but there were 11 reports of death (The Anti-schistosomiasis Leading Group... 1958, p. 63–72). Based on these figures, it seems that the three-day APT treatment was used to cure more patients. In December 1958, Ningguo county traced the cured patients and found that 5.64% of the patients who had received twenty-day APT treatment were positive for the disease and 14.6% of the patients who had received three-day APT treatment were positive for the disease (The Anti-schistosomiasis Leading Group... 1958, p. 63–72). Clearly, the three-day APT treatment was not more effective than the twenty-day treatment.

There were no well-equipped hospitals in communes or brigades, and the anti-schistosomiasis stations served as clinics. The anti-schistosomiasis stations were established in the infected area to treat patients, make arrangements for work related to the campaign and educate people. Since March 1963, the local authorities of the southern provinces had been using a mobile film projector to screen a film titled Kumu feng chun free of charge in rural areas. The film explained that the anti-schistosomiasis stations offered beds for the patients, employed Chinese and Western doctors and functioned as research institutes (Fan 2012). These statements were not true. The anti-schistosomiasis stations were poorly equipped. If patients were poisoned by APT, they were sent to stations for emergency treatment. These stations were not real hospitals or medical clinics and lacked necessary medical resources. The medical staffs of the stations were not trained as biomedical doctors. Some were Chinese medical physicians, and others were local volunteers. They did not have professional knowledge or any medical resources to save the lives of the poisoned patients. Suzhou city adopted three-day APT treatment in 1956 and cured a total of 43,805 patients. From January to May 1956, 35 patients died after receiving three-day APT treatment (The Editorial Committee... 1997, p. 195). The deaths occurred because the medical staff was unfamiliar with the three-day APT treatment; moreover, the medical staff was experienced but unqualified doctors who lived in the city center and could not reach remote areas. In 1958, in order to cure more patients quickly and achieve a high treatment success rate, Suzhou city also introduced one-day, four-hour, one-hour and one-time APT treatment. The patients worked in the daytime and were treated at night, and they did not have enough time to rest. Between June and October 1958, 8,332 patients received four-hour APT treatment, and 6,911 patients received less-than-four-hour APT treatment. The result was terrible: the death rate was several times that of the three-day APT treatment (The Editorial Committee... 1997, p. 196). Several similar cases are recorded in the local archives. For example, Jiangdu county was instructed to cure all patients within seven months in 1958, as a result of which the county adopted one-time APT treatment to cure 1,300 patients, and five patients died. Finally, only three-day and twenty-day APT treatment were adopted (The Anti-schistosomiasis Leading Group... 1983, p. 133–134).

These records show how the local authorities were forced to follow the central policy of using three-day APT treatment. Meanwhile, the twenty-day APT treatment was still used, but not as widely. Further, to meet

the expectations of the central government, local authorities were even employing two-day, four-hour and one-time APT treatment, but these were abandoned quickly on account of their high mortality rates (The Record of Prevention... 1990, p. 65). The locals were at the receiving end of these various treatment policies, and were also aware of the consequences and associated mortality.

Records of APT treatment in a local archive

In 1964, Wubei province held a conference attended by the representatives of anti-schistosomiasis units. The conference materials included a total of 78 documents – some were their speech drafts and others were documents for study. The purpose of circulating the documents was to share the success of schistosomiasis control. The contents focused on the units' successful cases and how they had overcome difficulties in controlling the disease. The aim of studying the documents was to promote the policies of the central government. There is no question that these cases were exaggerated. However, these documents also disclosed the difficulties faced by local units in implementing the three-day APT treatment. These documents were produced by small local units, such as communes and brigades but reflected the actual situation.

The three main points of these documents can be summarized as follows. First, it was necessary to perform fecal examinations. However, villagers were not willing to hand over their fecal samples for examination. Second, even though villagers knew that they were affected by the disease, they were not willing to approach the hospital for treatment. Third, the villagers were refusing APT treatment because they were afraid that it would kill them. Why did the villagers react in this way to the policies implemented by the central government?

The Health Belief Model (HBM) developed and modified by Hochbaum, Rosenstock and Kegels may help us understand the patients' refusal of treatment. Their study revealed that people were not willing to participate in Tuberculosis screening because they did not perceive themselves to be at risk for the disease. HBM includes six important concepts: perceived severity, perceived susceptibility, perceived benefits, perceived barriers, self-efficacy and cues to action (Hayden 2014). These concepts are useful in understanding villagers' refusal of APT treatment.

According to the summary by Christina Jones and her colleagues, the HBM posits that people will take action to prevent an illness if they believe that it will have potentially serious consequences (perceived severity), if they regard themselves as susceptible to a condition (perceived susceptibility), if they believe that a particular course of action available to them will reduce the susceptibility or severity or lead to other positive outcomes (perceived benefits) and if they perceive few negative attributes related to the health action (perceived barriers) (Jones 2015).

The anti-schistosomiasis campaign was launched nationwide in 1955. Until 1963, the central and local governments undertook many promotional projects for its prevention. Studies also proved that many people were mobilized to participate in the campaign (Fan 2008; Gross 2016). However, the villagers were hostile to the anti-schistosomiasis staff, as the common belief was that "[the staff] did not cure the sick but the healthy; the healthy people became sick, and the sick people died" (The Anti-schistosomiasis Station of Hanyang 1964, p. 3). Schistosomiasis patients at the early stage did not have obvious symptoms, and therefore regarded themselves as healthy. From their point of view, they were not sick and would not die from the disease.

The anti-schistosomiasis campaign was able to successfully mobilize the populace (including villagers in infected areas) nationwide to participate in environmental projects such as killing snails, establishing new water channels and blocking old water channels in order to interrupt the transmission of the disease. Thousands of people were mobilized as a result of this campaign. Why did the populace participate in the construction work but refuse to provide fecal samples and receive APT treatment? From the self-efficacy point of view, the villagers worked for the environmental projects and only spent their spare time in manual work. They believed that they had the ability to see the project to completion. Moreover, this project integrated elimination of the disease with increasing agricultural production, and the villagers were happy to engage in activities that could increase agricultural production. Even though their construction work was futile, the only thing they would lose was time.

Construction work was a collaborative effort, and anyone who did not participate would be criticized or charged with some crime. The local cadres placed great pressure on absentees and ensured that the appropriate punishment was meted out to them. Ironically, while the local cadres could push the villagers to engage in the construction work, they were unable to punish anyone for not providing their fecal samples or not undergoing APT treatment. Thus, the relationship between the local cadres and the villagers was complex.

The villagers were obviously aware that APT treatment could cure them of the disease if they had it. However, from the perspective of perceived barriers, they considered the refusal of treatment to be less harmful than the treatment itself. Because there were many schistosomiasis cases in every infected region, the local governments were under pressure to follow the central government's policy of eliminating the disease within seven years. Originally, the local government had to meet the target under great pressure and had to report regularly on

how many patients had been cured. Therefore, the local government would push villagers to undergo fecal examination and visit the hospital. However, the villagers and local cadres were concerned about agricultural production being affected at the same time. The local cadres were concerned that if too many villagers were sent for treatment, their village would have a shortage of agricultural labor. The local units would not be able to meet production targets under such circumstances.

The local authorities also lacked the necessary medical resources. For example, Xionghe town in Jiangning county had 5,000 schistosomiasis patients. In spring 1963, the town planned to cure 900 patients, but had only 9 staff dedicated to the anti-schistosomiasis campaign, two of whom had left town for studies and one of whom was responsible for administrative work. The remaining six staff were not trained doctors or fecal inspectors. Further, the leader was not a trained doctor or a Chinese medical physician, and he had learned to use a microscope and treat patients only after arriving in the town. The anti-schistosomiasis staff were required to learn injection skills and to use a microscope specifically for the anti-schistosomiasis efforts. But the staff of six was not sufficient to handle the large number of patients, because they needed to go door to door to collect the samples. Their only resort to meet the target was to send all villagers suspected of having the disease to nearby anti-schistosomiasis stations. The station originally agreed to hospitalize 50 patients, but finally accepted 100 patients (The Anti-schistosomiasis Station of Hanyang 1964, p. 35). Zhuzhan area in Xiaogan county had one trained doctor, and the others were junior medical staff and Chinese medical physicians who did not have any experience in treating the disease (The Anti-schistosomiasis Station of Hanyang 1964, p. 22). It was not surprising that the villagers did not trust the staff to cure them. Thus, this was perceived as a barrier by the villagers, who were wary about actively seeking medical advice and receiving APT treatment.

Although the stations were set up in counties, communes or brigades, they were not designed as hospitals. The schistosomiasis patients were sent to the stations for injection and treatment. The beds at the station were set up temporarily, and the arrangements were all makeshift. The patients were not willing to go to the stations for treatment because they were under the impression that these stations were not equipped with good medical facilities. Based on the information disclosed in the documents, the patients were not willing to be hospitalized at the stations because the stations did not offer quilts and they needed to carry one along to the station if they were to stay overnight (The Anti-schistosomiasis Station of Hanyang 1964, p. 68). Furthermore, the stations did not provide any meals, and the patients had to arrange for their own food (The Anti-schistosomiasis Station of Hanyang 1964, p. 66, 94). The case of Dongxiangshan of Hubei province illustrates the scenario well. In 1955, the leaders of the anti-schistosomiasis campaign in Dongxiangshan did not have access to any suitable unoccupied premises in which they could receive patients, and there were more patients than they could handle. They made arrangements for simple scaffolding structures in which they could receive patients. Moreover, the local cadres used the villagers' houses as temporary treatment premises. The villagers were very unhappy with the arrangements and were unwilling to cooperate with the local cadres (The Anti-schistosomiasis Station of Hanyang 1964, p. 43–44). It was anticipated that the patients would not receive quality medical care under such circumstances.

In another case, in Yixing brigade, only 29 of the 40 patients who initially volunteered were willing to visit the station for treatment. Further, of the 29 patients, 12 left before the treatment could be completed. Therefore, in order to meet their target, the brigade cadres sought patients door to door. Many people who did not report any symptoms were forcibly sent to the station for examination (The Anti-schistosomiasis Station of Hanyang 1964, p. 16, 49, 76, 94).

The anti-schistosomiasis stations were not as well equipped as hospitals to house patients for treatment. Many stations did not even have sufficient basic requirements, such as liquid glucose tubes, weighing scales and syringes (The Anti-schistosomiasis Station of Hanyang 1964, p. 71). Additionally, the anti-schistosomiasis stations at the brigade level often needed the assistance of stations at the county level. For example, experienced or well-trained staff from counties often traveled long distances to save the patients who had been poisoned by APT in brigades (The Anti-schistosomiasis Station of Hanyang 1964, p. 9). These conditions were one of the reasons why patients who were poisoned were so likely to die. Given this scenario, the villagers' first line of defense was to avoid or refuse fecal examination. The medical staff could not directly obtain the samples, and the villagers employed many tricks to deceive the staff, for example, by giving them another person's fecal sample or cattle dung (The Anti-schistosomiasis Station of Hanyang 1964, p. 71).

The villagers were also afraid that they would be forcefully sent to a station or hospital, where they had to pay a medical fee but had no spare money to pay. In the 1960s, the local authorities implemented Gongfen zhi (the work point system). According to Ferdinand Gul, the individual earned daily work points that were added to the work unit's collective pool. At the end of each year, the net distributable income of the production team was divided by the total work points earned by all members (Gul and Lu 2011, p. 116). Thus, if they were sent to the station or hospital, they would have to stop work and would therefore earn fewer points. They did not want their income to be reduced. Finally, they might also receive fewer daily necessities. The documents state these as the reasons why the villagers were

not willing to present themselves at the hospital (The Anti-schistosomiasis Station of Hanyang 1964, p. 71).

From the medical point of view, the citizens were afraid that the APT treatment would be toxic to their bodies. In addition, the quality of the medical staff was not high, as some of them were Chinese medical physicians who were not trained and did not know how to administer injections (The Anti-schistosomiasis Station of Hanyang 1964, p. 55). It was common knowledge that they lacked competence in this area. Obviously, the villagers did not trust the medical staff. When medical incidences occurred, the villagers and the medical staff would enter violent conflict (The Anti-schistosomiasis Station of Hanyang 1964, p. 9, 43). Both the medical staff and the local leaders were under great pressure. They had to follow central policy but they were not well-equipped and did not have enough medical resources. They were at the front line and had to face the villagers. They could not save patients who were poisoned. The patients were unwilling to receive APT treatment, even when they were aware they had the disease, because they were more afraid of the APT treatment than of the disease. The villagers did not believe in the benefits of receiving APT treatment. Instead, they believed that they would become weak and eventually die.

The anti-schistosomiasis campaign can be viewed from the perspective of the anti-schistosomiasis staff, the local leaders, and the villagers. The anti-schistosomiasis staff was required to implement central policy under any circumstances, and they were only concerned about completing the task and ensuring that the stipulated number of patients were brought to the station or hospital and treated. The local leaders were forced to participate in the campaign and assisted the medical staff in acquiring patients, but they were also concerned about hospitals and stations not being able to accommodate the number of people coming for treatment and about the decrease in agricultural production on account of the shortage of manpower. The villagers were wary of the APT treatment and unwilling to be hospitalized because they did not want to pay the medical fee and receive less income.

Conclusion

Although the central government wished to implement the anti-schistosomiasis policy to control the disease, the local government was only able to partially comply with the policy. The goal of both the central and local governments was the same – to increase agricultural production by controlling the disease. Killing snails and implementing local construction work were the focuses of the campaign. At the same time, there were many patients and potential patients who needed to be cured. Nevertheless, the villagers did not cooperate with the local governments with regard to receiving the treatment and providing fecal samples for examination. The villagers were concerned about the medical expenses of the treatment, their work points and agricultural production. The central government widely spread the news that the disease could be cured and that the three-day treatment was successful. However, these claims were not based on solid medical evidence, and the underlying aim was to reduce the medical expenses of the government. Moreover, it was not easy to convince villagers to be hospitalized. In conclusion, Mao's dream of eliminating the disease within seven years was an impossible one.

References

Anhuisheng xuefang zhi (Record of the prevention and history of schistosomiasis in Anhui province) (1990) Hefei: Huang Shan publishing house. (In Chinese)

Cheng TH (1971) Schistosomiasis in mainland China: a review of research and control programs since 1949. The American Journal of Tropical Medicine and Hygiene 20 (1): 26–53. doi: 10.4269/ajtmh.1971.20.26.

Chuhai miebing aiguo weisheng yundong shouce (Handbook for the campaign of killing pests and eliminating diseases) (1960) Beijing: Renmin weisheng Publishing house. (In Chinese)

Crichton-Harris A (2009) Poison in small measure: Dr. Christopherson and the cure of bilharzia. Leiden: Brill.

Dirk E et al. (2005) Control of schistosomiasis in China. Acta Tropica 96: 67–68. doi: 10.1016/j.actatropica.2005.07.004.

Fan KW (2008) Documentary records of the prevention of schistosomiasis in China. Journal of East Asian Libraries 143: 23–26.

Fan KW (2010) Mass mobilization and the anti-Schistosomiasis campaign in maoist China (1955–1960). Handbook of disease outbreaks: prevention, detection and control. New York: Nova Science Publishers. P. 277–293.

Fan KW (2012) Film propaganda and the anti-schistosomiasis campaign in communist China. Sungkyun Journal of East Asian Studies 12(1): 1–17.

Fan KW, Lai HK (2008) Mao Zedong's Fight Against Schistosomiasis. Perspectives in Biology and Medicine 51(2): 176–187. doi: 10.1353/pbm.0.0013.

Fangzhi xuexichong bing gongzuo zhong jige wenti (A few questions of the anti-schistosomiasis works) (1956) People's Daily. (In Chinese)

Farley J (1991) Bilharzia: a history of imperial tropical medicine. Cambridge: Cambridge University Press.

Gross M (2016) Farewell to the god of plague: chairman Mao's campaign to deworm China. Oakland: University of California Press.

Gross M, Fan KW (2014) Schistosomiasis. Medical transitions in the twentieth century

China. Bloomington: Indiana University Press. P. 106–125

Gul F, Lu HT (2011) Truths and half truths: China's socio-economic reforms from 1978–2010. Oxford: Chandos Publishing.

Hangzhou shili disan yiyuanyong tiji zhiliao xuexichongbing de xiaoguo (the third hospital of Hangzhou city used APT to treat schistosomiasis) (1956) People's Daily (In Chinese)

Hayden JA (2014) Introduction to Health Behavior Theory. Burlington: Jones& Bartlett Learning.

Huang F (2005) Guangdongsheng xuexichongbing liuxing yu kongzhi (Schistosomiasis prevalence and control in Guangdong province). Guangzhou: Guangdong keji publishing house. (in Chinese)

Hunan diaochayanjiu xuexichongbing (Schistosomiasis research in Hunan) (1956) People's Daily. (In Chinese)

Jianjuedi xiaomie xuexichongbing (Eliminating schistosomiasis resolutely) (1957). People's Daily. (In Chinese)

Jones CL (2015) The health belief model as an explanatory framework in communication research: exploring parallel, serial, and moderated mediation. Health Communication 30 (6): 566–576. doi: 10.1080/10410236.2013.873363.

Jueding tuiguang tiji duancheng liao fa (It was decided to promote APT) (1956). People's Daily. (In Chinese)

Kunshanshi xuefang zhi (Record of the prevention and history of schistosomiasis in Kunshan city) (1995) Shanghai: Shanghai kexue jishu publishing house. (In Chinese)

Li YS (2010) The elimination of schistosomiasis in Jiaxing and Haining counties, 1948–59. Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century. Durham: Duke University Press. P. 204–227.

Lo W (1958) Donglanxian xiaomie xuexichongbing de jingyan (The experience of eliminating schistosomiasis in Donglan county). Collected materials of the meeting for schistsosmiasis treatment. Beijing: Keji wansheng Publishing house. (In Chinese)

Maegraith B (1958) Schistosomiasis in China. Lancet 271: 208–214. doi: 10.1016/S0140-6736(58)90686-X.

Mao ZD (1955) Perface to socialist upsurges in China's countryside. In Communist China 1955–1959: Policy Documents with Analysis. Cambridge: Harvard University Press.

McManus DP, Li YS, Gray DJ, Ross AG (2009) Conquering snail fever: schistosomiasis and its control in China. Expert Review of Anti-infective Therapy 7(4): 473–485. doi: 10.1586/eri.09.17.

Ministry of Health, People's Republic of China. Xuexichong fanghi shouce (Handbook for the prevention of Schistosomiasis) (1964) Shanghai: Shanghai Kexue jishu publishing house. (In Chinese)

Quanguo xuexichongbing zhiliao gongzuo zuotanhui zai shanghai juxing (The national meeting of the treatment for schistosomiasis in Shanghai) (1956) People's Daily. (In Chinese)

Qunzhong huanying de yige xuexichongbing fangzhi xiaozu (The masses welcomed a committee of the anti-schistosomiasis) (1956) People's Daily. (In Chinese)

Sandbach FR (1977) Farewell to the god of plague-the control of schistosomiasis in China. Social Science and Medicine 11: 27–33. doi: 10.1016/0037-7856(77)90142-1.

Section of Epidemic Prevention of Health Bureau of the Committee of Politics and Military of Eastern China (1952) Xuexichongbing ziliao huibian (The collected materials of schistosomiasis). (In Chinese)

Taylor K (2005) Chinese Medicine in Early Communist China, 1945-63. London: Routledge.

The Anti-schistosomiasis Leading Group of Ningguo County (1958) Ninguoxian xuexichongbing fangzhi ziliao huibian (The collected materials of the prevention of schistosomiasis in ningguo county). (In Chinese)

The Anti-schistosomiasis Leading Group Office of Jiangdu County (1983) Jiangdu xuefangzhi (The record of anti-schistosomiasis of Jiangdu county). (In Chinese)

The Anti-schistosomiasis Station of Hanyang. Quansheng fangzhi xuexichongbing xianjin danwei xianjin gongzuozhe daibiao huiyi wenjian (The meeting documents for advanced units and representatives of advanced workers of the anti-schistosomiasis in province) (1964) Hanyang: the Anti-schistosomiasis Station of Hanyang. (in Chinese)

The Editorial Committee of the Anti-schistosomiasis Historical Record of Suzhou (1997) Suzhou xuefang shizhi (Record of the prevention of schistosomiasis in Suzhou). Shanghai: Shanghai kexue wenxian publishing house. (In Chinese)

The Record of Prevention of Schistosomiasis in Huarong County (1990) Shanghai: East China Normal University Press. (In Chinese)

Townsend J (1969) Political participation in communist China. Berkeley: University of California Press.

Warren K (1988) Farewell to the plague spirit: chairman Mao's crusade against schistosomiasis. Science and medicine in twentieth-century China: research and education. Ann Arbor: Center for Chinese Studies, the University of Michigan. P. 123–140.

Yixuekexue bixu wei shengchan jianshe fuwu (Medical science has to serve for production) (1960) People's Daily. (In Chinese)

Yizhong zhiliao xuexichongbing de youxiao zhongyao fangji zai yanjiu zhong (An effective Chinese medicine for treating schistosomiasis was researched) (1956) People's Daily. (In Chinese)

Zhejiang renmin fangzhi xuexichongbing de douzheng (People of Zhejiang province's fight to schistosomiasis) (1956) People's Daily. (In Chinese)

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