



E-ISSN: 2706-9117

P-ISSN: 2706-9109

[www.historyjournal.net](http://www.historyjournal.net)

IJH 2021; 3(1): 28-36

Received: 21-01-2021

Accepted: 23-03-2021

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## **Injection of imperialism: Health, waterworks, sanitation policies and programmes in colonial Punjab, a case study of Ferozepore, 1897-1947**

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### **Abstract**

In the present paper I want to explore the health, sanitation And waterworks in colonial Punjab and also discussed the overall impacts of British Health policy on our social, political, economic, cultural and demographic setup. Basically the training of discrimination and imperialism started by The British after the suppression of The revolt of 1857. In the present proposal I have established that the policies of Health, sanitation And waterworks of British provided them a moral base for the legitimacy of British Rule in India. British believe in the policy of punish and reward in each and administrative support for the continuity of their imperial power.

**Keywords:** imperialism, colonial state, health, waterworks, sanitation, leadership, legitimacy

### **Introduction**

Health, sanitation and waterworks remained always in the top priority and playing landmark role for every civilized society from Indus Valley civilization to today age of digital global world. And have seen a lot of historical and scientific developments in the area of Health with Continuity and change. The present research proposal is at the forefront of historical research in to public health and health services in colonial Punjab. In fact historical understanding is very relevant of public health in the present because present development and growth cannot understand without the knowledge and wisdom of past. Health, sanitation and hygiene is in the top priorities in the UN Millienum and Sustainable Development Goals. After the suppression of 1857 revolt in India British administrators took direct accountability for the reform in the medieval administration. The disintegration of the central power of Mughal Empire after Victoria declaration British established a moral base and legitimacy to imperialism in India. Before 1858 East India Company was only a trading power regulated by British Parliament. During the 18th and 19th century Punjab was divided into many small territories, ruled by Sikh miles in central parts, Rajput in Hill areas, And Muslims in Trans Indus, Multan and its adjoining areas. At that time Maharaja Ranjit Singh hailed from Sukerchakia Misl, conquered All these small territories and unified those areas in a very strategic way. But after the weak policy of his successor and Strategies of East India company annexed Punjab in 1849. It was the last area of Indian Subcontinent to fall under British dominance. After the annexation of Punjab the governor General of India lord Dalhousie implemented a three members of Board of administration to govern the Punjab province. The board of Administration abolished in 1853, and replaced by Chief commissioner John Larewness and after 1858 the administration of Punjab went into British Parliament undersecretary of state. The office of lieutenant Governor worked very actively till 1919. But in 1919 the Montagu Chelmsford reforms was the turning point when the provincial autonomy started and the system remained till 1947 and during this period the area of health sanitation and waterworks become flourish and developed in a vast way rural as well as urban Area.

### **Historical Background of Punjab**

My Research Area is colonial Punjab

And in Vedic age Punjab was named as Sapata Sindhu, the Vedic land of seven rivers, The Sanskrit name of this area which is mentioned in Ramayana and Mahabharata for example was Panchanand which means land of five rivers and in Persian Punjab 's name is a

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compound of two Persian words- panj means five and aab means water and was introduced to the region by the turkish and persian specially. Punjab literally indicates the land of five rivers, which rivers are like the Jhelum, the Chenab the Ravi the Sutlej and the Beas. Really Punjab is a land of fertility and prosperity from ancient time and geographical and histriocical context always changing according to the Continuity and challenges.

### Historical Background of Ferozepore

Ferozepore was a historical, political, economic, cultural, strategic area and a hub of sustainable development of south East Asia from medieval times. Ferozepore is the oldest district of Punjab and established in 1833 as a district head quarter even before Ludiana and And Amritsar became districts, even after the independence of Pakistan in 1947, Included many area which were later re-organized to be a part of Faridkot Mukatsar, Batinda and Fazilaka Districts. It is founded by Ferozshah Tuglak in 14 that century who had a passion for founding cities. Ferorpur is also called as 'Shadeedon like dharti '(The land of Martyrs). Three heroic Martyrs of India's freedom struggle Shaheed Bhagat Singh and his associates Shaheed Rajguru and Shaheed Sukhdev have their final resting place on the bank of the river Satluj in Ferozepore. On March 23, Despite popular protest, these three heroes wear executed in Lahore and were stealthily cremated in the dead of the night near Ferozepore, Today's a Shaheed Bhagat Singh Memorial marks the spot and every year on March 23, thousands of people gather to pay homage these noble heroes <sup>[1]</sup>.

### Development of Health, sanitation and waterworks

Health mean the science and of art of preventing diseases, prolonging life and promoting health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in personal health, the organization of medical and nursing services for the early diagnosis and preventive treatment of diseases and and the development of social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of improvement of health <sup>[2]</sup>. South Asia was a epitome of Confulence of Eastern and western health conscious practices tool and techniques in colonial age. There was a fully developed health system and various health practice in colonial Punjab. There was a two system of Health Patterns in South Asia One was western system and Eastern system. The Eastern system is very ancient and Traditions system. And there was a lot of institutions establishment from ancient to medieval and medieval to colonial age of India. And in the establishment of health institutions not only the state was playing dominating role but the public directly or indirectly playing an important role in the form of giving charity, counseling for the betterment of public health of India. One is Allopathy and other is Homeopathy. Basically Allopathy is a system of medical practice that aim to combat diseases by use of remedial drugs and medicine which control the concerned diseases, the primary aim of this practice is to provide vaccinations to people against different diseases like

malaria, swine flu and cholera etc. And Allopathy was fully developed practice during the colonial times and dominating the health system of India It also provides help to undernourished children and pre pregnant and post pregnant women. The allopathic department was working under the supervision of the Chief medical officers in district, various local Practitioner also working in rural as well urban area. There was a detailed and rich record of immunization, vaccinations, complain book, OPD record of Malaria, Smallpox, Cholera patient, deficiency, disabilities, Registration of birth and death, X ray and many diagnosis practices were prevalent under the system. The Concen system was under the Public health department of public province. There is a lot of evidence in district gazetteer and Punjab archives Patiala. The record of public health department from 1927 to 1945 is very detailed and vast. The Francis Newton Mission hospital and cantonment Board hospital established during the colonial times in Ferozepore. One other practice was also prevalent during colonial period of Punjab was which was homeopathy, a system of medical practice in ailments are treated by very small doses of natural substance in larger amount. This department is managed by district homeopathic officers at District level govt homeopathic dispensaries, civil hospitals. Some Practitioners which were called Vaid and Hakim from the Mughal period. Ayurveda also a ancient practice prevalent till today and was very popular and providing health in colonial period of Punjab. The World health organization (WHO) defines 'sanitation 'as a group of methods to collect human excreta and urine as well as community waste water in a hygienic way, where human and community health is not altered. Sanitation methods aim to decrease spreading of diseases by adequate waste and food and by restricting the occurrence of causes of diseases. Sanitation is a recognize where health problem originate and how to better sanitation by their own actions. Essential part of sanitation is building and maintaining education on sewage systems, wash up and toilet facility <sup>[3]</sup> Waterworks is system of reservoirs, channel, main and pumping and purifying equipment by which a water supply is obtained and distributed <sup>[4]</sup>. Water is essential to life. It has many healing properties and contribute up-to seventy

Percentage of Our body weight. It keeps the skin soft, supple and free of wrinkles, remove inorganic mineral deposits, flushes out toxin, prevents constipation, protect against virus/infections and help to remove cholesterol and extra fat. The type of water we drink today, and the insufficient amount consumed, contribute to arteriosclerosis illness and premature aging. Unfortunately tape water open contain the residues or homeopathic concentration of modern drugs and hormones which are not remove during the filtration process. at sewage plants. It may also contain toxic chemicals such as cholerin and floride. Even today 's naturally distilled water, rain is often polluted by our industrial technology, Bottled water, water filter and water purifier, water coolers, water softener, reverse osmosis system and water distiller may help rectify this situation. However, whilst distilled water contains only pure H<sup>2</sup>O water this is free from harmful inorganic compound toxic, toxic chemicals bacteria, and virus - the electricity and heat

1 <https://en.m.wikipedia.org>.

2 Winslow, CEA, The Untitled field of Public Health, Science, 1920, Jan 9-23-33, DOI,10:1126/Science

<sup>3</sup> Khar Hairs Munciplity (web doucement) available on worldwide :http /member. Tripod. Com/gesondheid /general, html

<sup>4</sup> www. meridian. webester. Com.

used to produce it may reduce its 'life energy and prana' [5]. In 1885 Punjab administration began an ambitious plan to transform over six million acre of barren wasteland in central and western Punjab into irrigable agriculture land. The creation of Canal colonies was designated to relieve demographic pressure in the central part of province. Increase productivity and Revenue and create a loyal support amongst peasants landholders. The colonization resulted in an agricultural revolution in the province, rapid industrialisation and the resettlement over one million Punjabies in the new area, A number of towns were created or saw significant development in the canal colonies. Such as Lyallpur, Sargodha and Montgomery. Colonization led to canal irrigated areas of Punjab increasing from three to fourteen million acre in the period from 1885 to 1947 [6].

Water is very essence of every living thing. World water day celebrated on 22 March show the importance of water for international community. The main sources of water was Satlej in colonial Punjab. Access to the basic amenities was a great challenge for common man in colonial India. My focus upon the institutional aspects of Health, sanitation and waterworks in colonial Punjab. As such like other public services in colonial India were like judiciary and police services, Indian civil service was established with the same way the public health services, sanitation and waterworks also played a powerful role for establishing a moral base and epistemological way for legitimacy in India. And health is directly linked with the clean water and a better procedures and techniques of sanitization. During the colonial period due to the regular pattern of epidemics, famine, Hunger, Stravation created and generated an awareness about the good health, sanitation and waterworks. British were great system makers and strategic and they know very well how to get and use data and information into productivity and in establishing epistemological institutions for health services. They gained a moral base as well as legitimacy in India on their tools and techniques of administration. According to the WHO(1999) public health services produce public goods of incalculable benefits for facilitating economic growth and poverty reduction. Consider for example the long term growth possibilities generated by draining the swamp around which Washington D. C. was built. And conversely, consider the global economic cost imposed by the avian flu and SARS Epidemics, emanating from poor poultry keeping and health practice in a few Chinese localities. In India the 1994 Plague Epidemics following poor municipal sanitation in Surat is estimated to have resulted in losses totalling \$1.7 billion. So this discussion shows the Public health directly connected with the economic growth of any country. The diseases which are responsible to create Epidemics in colonial India :Cholera, Malaria, plague, fever etc. These Contagious diseases and effects of epidemics to the soldiers specially. And it inspired British administration to implement a well decorative administrative system. Water Borne diseases badly affected the Punjabi from 1850 to 1890. So after a long crisis and survey in 1890 the sanitary officers had begun to consider the effects of impure water on the health of the population in general. Census commissioner in 1891 pointed out that among Famine and Epidemics diseases, the more

powerful a series of years is Epidemics diseases and in particular Cholera, smallpox and fever. The evolution of Public health in colonial Punjab in the 19th and 20th century provide a valuable insight in medical system. In a clear way a public health commissioner and a statical officer was appointed to the Govt of India in 1869. In 1896 with the abolition of the Presidential system, All three presidential medical services were amalgamated to form the Indian Medical services (IMS). After the development of IMS, medical duties for Royal Indian army were performed by Army Medical department, later called the royal army (RAMC) according to British official Record.

But it was a turning point in the health system when Montagu Chelmsford constitutional reforms of 1919 led to transfer of public health, sanitation and vital statistics to the provinces. This was first step in the decentralization of health administration in India. In 1920-21 Municipality and local Board acts were passed containing legal provision for the advancement of public health in provinces. The govt of India Act 1935 gave further autonomy to provincial governments. All the health activities were catheories into three parts - federal, federal cum provincial and provincial. In 1937. The chief advisory Board of health was set up with the public health commissioner as a secretary to coordinate the Public health activities in the country. In 1939 the Madras public health act was passed which was the first of its kind in India. In 1946 the health Survey and Development committee (Bhore committee) was appointed by the government of India to survey the existing health structure in the country and make recommendations for future developments. The committee submitted its report in 1946 and the health of nation was reviewed for public health medical relief, professional education medical research and international health (Mark, Harrison, Public health in British India) During colonial period there was three Tehsil under the Ferozepore administrative structure. Which were Zira, Moga and Mamdhot. There were many public dispensaries, health center and traditions or modern health practitioner in the area. Francis Newton mission hospital which was established by missionaries and was an important health providing centre of south East Asia. It was established in 1894. Ferozepore Cantonment board was established 1839 When Henry M Lawrence was posted as an assistant agent of North west frontier (<https://Wikipedia>)

### Review of literature

A large number of books has been written on British administration, But a few of them give us information about the administration of Public health, Sanitation and waterworks in colonial Punjab.

The overall literature has been categories into four parts-

- Books of First category related to the political Administration of the colonial period.
- The second category includes the books on society, territorial and financial Administration of colonial Punjab.
- The third category deals with books that give information about Health system and traces the western health practices like Allopathy.
- The fourth category deals with articles, newspaper, health reports, unpublished doctoral thesis and M.phil. Dissertation that penetrates the health, sanitation and waterworks in Ferozepur district.

<sup>5</sup> Everyday Ayurveda, Danny Cavaugh and Carol wills, 2004, Ayurvedic UK.

<sup>6</sup> Census of India, Govt of India

**First category**

These books covered colonial overall Administration of policies and programmes of British in Punjab. Some books light up on Political development. Some books related to the work of the Board of Administration, Some related to the changing policy after suppression of the 1857 revolt and after the Montagu Chelmsford reforms of 1919 and till the partition of India.

S. Gopal's book 'British policy in India' has focused on the policies, procedures and programmes of British during 1858-1905. After the suppression of 1857 revolt British government took direct responsibility of Administration. The author emphasis was upon Administration, which was very organized and central in nature. British was politically very conscious and the book elaborate the first phase of Administration from Canning to Lord Curzon who was a great imperialist and believe in the policy of expansionism. The author has made a systematic study of Administrative policy of the concerned period. But he ignored the British policy and programs after the demise of Maharaja Ranjit Singh and his successor.. The author has very limited approach only give the political and strategic work of the governor General and Administrators and has not mention about public health, sanitation waterworks, famines and poverty.

In his work Imran Ali (1988) 'The Punjab under Imperialism' The time period of this work is 1885 to 1947. In this work the author evaluate the whole policies and programmes, tool and techniques of British imperialism in colonial Punjab. The author proves the Punjabi was very versatile and strategic geographic location in South Asia for British. But after the annexation of Punjab in British Empire and after that a lot of strategic work done by British like great agriculture colonization, established canal colonies, Railways cantonment and bridges, lot of water reservoirs. The British administration work was very vast and made revenue settlement in each district under an efficient administrator. The author explains the three tracts of Bari, Rechna, and Jech Doab. Author makes a statement that colonization project were based on network of canals, branches and distributaries spread over the flats alluvial plains of western Punjab. The time of colonisation between 1885-1945. The moral base and legitimacy of British bureaucracy establish during this period. The author has provided lot of information about waterworks but public health policy and sanitation are ignored because public health, water and sanitation are interrelated to each other.

-----B. B. Misra's book (1977) 'The bureaucracy in India: An historical analysis of development up-to 1947, a classical work of the continuity and development of bureaucracy in India. The author examines the Hegel, Marx and Weber concept of legitimacy. In his book Prof. Misra discusses the uniformity and codification of law establishment by bureaucracy. Misra defines the all development of the First World War, second World War and during partition. But in this book Public health work, Sanitation and waterworks and contribution of the concerned bureaucracy is ignored.

-----David. c. Potter's 'Indian political administrator from ICS to IAS (1996)' is a good work sketch about the administrator before and after independence. The author examines the administrative continuity and explain the consequences of the continuities for the establishment of Modern India. In this book the author focus upon the men

who ruled India and make a moral base to administer India. The study also make a great contribution about the political aspect of the elite administrator. But this book neglect those missionaries and administrator who served all life for the betterment of public health services, sanitation, hygiene and waterworks.

----- In her book 'Epidemic, Malaria and hunger in colonial Punjab' (2018) Sheila Zubrigg describes the primary role of hunger and starvation for occurrence of Malaria epidemics in North west area of Punjab. The author analyze a lot of registration data and examined the impact of Malaria mortality from 1868-1947. The book basically role of hunger in Punjab health and the other aspects like sanitation and waterworks are ignored who are responsible for the waterborne diseases in the concerned area of South Asia.

**Second category**

These works gives information about the health and medical administration system. And the different functions of sanitary inspector to sanitary commissioner, Canal officers, works of irrigation department, work of P. W. D.. Other important aspects of social setup, urban and trade related aspects also discussed.

-----In his book Anil Kumar 'Medicine and the Raj: British Medical policy in India: 1835-1911, depict a great picture of medical policies and programmes, It has a good representation of colonial evolution of medical practices and gives a lot of ideas regarding the medical practice, and gives a detail account of medical development of as a profession. The different aspects have been covered, but there is not a individual section of colonial Punjab health administration. There are many gaps which can be used by the reader for explanation and interpretation. The discussion of pharmacy is very important.

-----In his book Roger Jeffery (1988), 'The politics of health in India' give a clear sketch of the westernization of health system of India. Although there were many traditional health care system like homeopathy, Ayurveda and Unani practice in colonial India. The gives the details of rise of new diseases like plague, Malaria due to the canal expansion. As British established new medical practices and modern institutions. And cancelled the land grant to Ayurveda and Unani practitioners. His analysis of Indian medical services, health investment for infrastructure, the growth of Modern medical education, the incorporation of native tool and techniques. Although the author gives details analysis but there is not individual section and waterworks administration about the important geographic location like colonial Punjab of south East Asia. So the needs a lot of interpretation and explanation.

-----In her book 'Western medicine and colonial Punjab: A Socio-cultural perspective (1849-1901)' Pawandeep Cheema gives details discussion about the institutionlization of Allopathy and its interaction with the biomedical patterns. The book provides a lot of information about the rise of cholera and plague Epidemics and policies, malaria and smallpox. The author is much concern about the health issues and tells us that the average age of life expectations of 22 years in 1901. The level of hunger, starvation and infectitious diseases was very high. The author gives a beautiful Socio culture perspective of colonial Punjab. But book needs a lot of interpretation because the composite dynamics of health, which is public health, sanitation and waterworks in ignored by author.

Third category of books deals with the health sanitation and waterworks of Jullundur division of colonial Punjab because Ferozepore was a district of Jullundur division. And gives information about the the administration and developments of public health, sanitation and waterworks in colonial Punjab.

-----In his book Sumit guha, (1993) Nutrition, Sanitation and hygiene and the livelihood of Death: The British Army in India (1870-1920) focused upon the world countries about the infectious diseases, from 1870 to 1920 and gives a detail sketch about the health experience of British soldiers and their families in India. Health education personal hygiene and sanitation do a drastic effect during first decade of tweienth century. The author indicates by showing despite all the health care facilities death rate of British and Indian soldiers around 1910 were higher than those of ordinary Indian of the same age and sex during the 1870 and 1880. But the gap in this book is it focuses basically upon about military health and ignore overall health scenario. So the work need a new interpretation and explanation.

-----In his book Diseases, Medicine and empires perspective on Western medicine and experence of European expansion (1988) David Arnold discussed about the European medicine and imperial experence. The author also clarified about the politics of Race and epidemic diseases. David Arnold generated ideas and terminology in which medical debate and research were conducted in all the colonies under white men. The author clarify that with the establishment of medical establishment in Britain the medical profession emerged in colonies under Britain. So the author shows the direct connection of medical profession in Britain to the colonies under domain. The book basically based upon the history of medicine and relationships between medical and empire and not give an overall pictures of all health experimental design.

-----Deepak Kumar (1995) in his book covers a well decorated history of scientific research, education and organization in India during the early phase of colonial India. In this book the author gives a moral and documentary base for the establishment of colonial Science in India because English was the instruction language of British and this was not favorable for Indian. Although this work is a great scholarly work it focuses upon only the westernization of medicine and ignores traditions practiced like Ayurveda, homeopathy and Unani.

In his book (1994) 'Public health in British India : Anglo-Indian preventive medicine 1859-1914, M. Harrison described a detail about historical background of the foundation of Public health in India and different challenges and cirisis involved in the process. The author started from the military experence of 1857 in which many British troops of India affected by the Epedmeics. A chronological Survery from 1857 to 1914 in crystal clear style. A good Comparison of death rate of European and Indian troop discussed. The problems of drainage system and water supply has been discussed. Lock hospital, sanitation commissioner, sanitary policy The military cantonment act of 1864, The contagious acts are discussed. Development of vaccinations also discussed in detail. But the book deal only the medical aspects and about army experence and not given the details of overall pubic health, sanitation and waterworks policy.

-----In her book (2014) 'Social history of epidemics in the colonial Punjab Dr. Sasha described the regular patterns

of epidemics in a detailed and effective way. And tells Epedmeics were responsible for the untimely death of the large number of people. Although the all colonial India was affected but Punjab was badly affected by the occurrence of epidemics. Punjab was very prosperous and has strategic and fertile geographic location for brithisher and fulfillment all recruitment of British army. British handled the situation of epidemics in an effective and energetic way. But the author discussed only social and cultural concern of epidemics in detail way and ignore the overall health, sanitation and waterworks policy of British bureaucracy.

Fourth category deal with articles, unpublished and published doctoral theses that explore the health, sanitation and waterworks in colonial Punjab.

The Article 'Epedmeics in Colonial Punjab 'written by Dr Shasha in the journal of Punjab studies, spring -fall 2013, volume 20-1,2. In this work the author describes about the causes and impact of patterns of epidemics in colonial Punjab. And Dr Shasha describes the intensity of epidemics in different areas of colonial Punjab, She indicates the variations of rural and Urban areas. From 1897-1918 Plauge erupted with varied intensity in twenty six districts, and had a mortality rate which was approximately four times to the whole India. The British role for control the epidemic was very active and adopt comprehensive measure to deal the situation, so the paper is focused upon the paradigm of epidemics only and not discussing about the overall health practices, waterworks and sanitary work.

-----In his paper 'Public health in British India : A brief account of History of the medical services and disease prevention in colonial India, publish in Indian journal of community medicine, M. U Miserable provide a valuable insight about the evouoltion of Public health and disease prevention. The gives information about the establishment of medical department, functions of sanitary inspector to sanitary commissioner and health commissioner. He gives a detail chronology about the development of vaccinations and initialization of Quaine. The changes in Administraton like the abolition of presidential system in 1896, The decentralized of power in 1919, And the features of Govt of India act 1935 and the establishment of central advisory board of health in 1937 also discussed. But the work focus only the evouoltion of western medicine and ignore the traditional practice of health in Colonial India.

-----In his paper 'Railway development in colonial Punjab : Social and cultural assimilation 'Published in International journal of social science and humanities research, Bhupinder Singh and Amandeep Kaur discribe the the connection between railways and Military cantonment and and indicate the importance of Multan, Peshawar, Lahore, Ferozepore as a strategic geographic location of south East Asia. So the paper indicates the factors of the development of economic political and cultural development of colonial India. But the paper ignore the role of railways and cantonment in the polices and productive programmes of health, waterworks and sanitation services.

In his publishef thesis 'Public health and sanitation in colonial Lahore, 1849-1910, Mysoon Sheikh discusssed the important consequence upon India due to the annexation is indicated. New design of urbanization, enivoremental reform and sanitation work were done by British government is discussed. The development of Lahore as modernization figure has discussed. All law, policies and procedures are discussed for the planning and health and

sanitation Administration has been discussed in a very effective and detailed way. The control of Epidemics, cleanliness, history of vaccinations and inoculations also discussed. This work is really a scholarly work but the role of waterworks has been ignored in this work. So it needs more interpretation and explanation.

### Research gap and New Findings

A lot of good work have been written on the medical policies of British and patterns of epidemics in colonial Punjab. But the health waterworks and sanitation policy and programmes have been ignored by many scholars. There are a number of general work upon Epidemics and medical system of British bureaucracy. These work provides a lot of information about structural aspects of the health concerns of British. There are a lot of information about British administration like judiciary, executive and legislative. But structure of British health administration has been ignored. A few writing upon health practices in railways and military cantonment have discussed but overall health policy, waterworks and sanitation of colonial Ferozepore is fully ignored.

### Justification of the Topic

After discussing the research gap it is clear that the previous works have not focused on the health, waterworks and sanitation in a holistic approach. The research on health, waterworks and sanitation of colonial Ferozepore remained untouched and unexplored in colonial Punjab. My efforts will be the interpretation of these area in a new style and very elaborate way so the the health, sanitation and waterworks works can become the major concern area.

### Research questions.

1. What type of policy and programmes adopted by British administration for maintenance of health, waterworks and sanitation?
2. How the British health, waterworks and health policy established a moral base and legitimacy to British Administration in colonial Punjab.
3. What was the pattern of epidemics in colonial Punjab.
4. What was the colonial response to epidemics?
5. What is the relationship between health, waterworks and sanitation?
6. What is the rural -urban gap of health and public utility services.
7. What is the social, cultural and demographic impacts of epidemics and and Health and sanitation practices of British.

### Objective of proposed study

1. To explore the health, waterworks and sanitation of colonial Ferozepore.
2. To examine the efforts of British administration regarding the control of epidemics, famines, Stravation and poverty in colonial Punjab.
3. To survey about canal colonies, waterworks, rise of vaccinations.
4. To analysis the continued impacts of British policy and programme upon colonial Ferozepore.
5. To examine the impact of Famine and Epidemics upon the society and economy of colonial Punjab.

### Hypothesis

The policies and programmes of health, waterworks and sanitation played an important role for the establishment of the moral base and legitimacy in colonial Punjab and become responsible for the decline of Mughal Empire.

### Research Methodology

I used primary as well as secondary sources related to health, waterworks and sanitation under Colonial Punjab. The primary data gathered from personal interview, questionnaires and observation of colonial Ferozepore. I used British record and gazetteer of Punjab district will be consulted. National archives, Panjab state archive Patiala visited and consulted a lot of libraries for collection of materials. And visited Public health centers, cantonment, railways library municipal corporation offices special Abohar, Ferozepore, Fazilaka for established a strong base of colonial health, waterworks and sanitation of colonial Punjab.

### Time and Area of my research Proposal

The title of present research work deal with the late 19th and mid 20th century of colonial Punjab. The study covered the overall British policies and programmes which includes the growth of medical profession and traditional practices like Ayurveda, homeopathy and Unani practice Patterns of epidemic and the impact upon social, cultural, political and economic condition. I am taking a case study of colonial Ferozepore in Punjab.

### Chapterization (tentative)

1. Introduction.
2. The pattern of epidemics and Colonial response
3. Development of Health in colonial Punjab.
4. The development of waterworks in Colonial Punjab
5. Development and patterns of sanitation in colonial Punjab.
6. Impact upon society, culture and demography.
7. Conclusion

### 1. Introduction

First chapter will be divided into three sub sections. First section will be present the historical developments of past events of Punjab region and British policies of expansion and consolidation. With the annexation of Punjab and the suppression of revolt of 1857. And in the second section the development after the direct rule and administration of 1858 will be discussed. In the third sections pattern of epidemics and colonial response which will become responsible for the development of health waterworks and sanitation in colonial Punjab. And this is the turning point for Britisher when they take action for controlling the Epidemics and unsanitary living conditions They make the policies and programmes and established commissioner for inquiring about famine, hunger and Epidemics senario.

### 2. The patterns of epidemics and Colonial Response

In this chapter I will discuss about the patterns of epidemics and discuss about the main cause which were responsible for the occurrence of Epidemics regular like hunger, malnutrition, famine Stravation and unsanitary living conditions in rural as well as urban areas in colonial Punjab. I will also create a discourse that directive to occurrence of

Epidemics the British bureaucracy prepared his strategy in vigorous way for control the epidemics in strating and after that do work in the continued and visionary way for the improvement of public health, sanitation And waterworks. The three factors because very relevant for British administration. And also discussed the various Epedmeics like plague,malaria,cholera and smallpox will be discussed in detail way.

### 3. Development of health

In this chapter the the growth and development in colonial Punjab and polices, programmes, procedure, tool and techniques of British bureaucracy will be discussed which will provide a moral base and legitimacy to Brithisher in colonial Punjab. And the tradition of Ayurveda, Homeopathy and Unani will be discussed and the conundrum between the both health practices between western and eastern practices.

### 4. Development of waterworks

In this chapter I will discuss about the great network of canal colonies in colonial Punjab and different sources of water like ground water in which pond, Wells, tubwell and canal system. Although there were five rivers but, the main sources of water was the Satlej river in the concerned area and mansoon rainfall water also responsible for the fertility and greenery of the region will discussed.

### 5. Development of different pattern of Sanitation -

In this chapter I will discuss about the importance of sanitation and cleanliness for disinfectecing any polluted thing. Different methods, tools and techniques which were used in hospital,public health center and amenities centre will be discussed.

### 6. Impact upon Society polity, Culture and demography

In this chapter the overall impacts of poverty, famine and Epedmeics diseases will be discussed and the programme and polices created by British administration and their diverse impacts upon social, cultural, economic, political and demographic arenas will be discussed.

### Conclusion

The final chapter present the crux of the whole chapters and finding of the research work will be discussed in this chapter.

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