

Girmitiyas' Health: Review, 2017

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Abstract

Of the over 60,000 indentured workers brought to Fiji, 14% perished from a variety of causes during indenture. Most deaths were recorded early in their stay in Fiji. Fiji recorded the highest incidence of girmitiya death of all Girit colonies. This paper examines the official death data of the Girit era from the perspective of current medical knowledge. The paper examines the nature of work done under Girit and examines the calorie requirements for such work. It shows that the ration packs lacked sufficient calories, thereby creating high incidence of malnutrition on the plantations. It argues that malnutrition was possibly under-pinning the diverse causation of the alarmingly high morbidity/ mortality in this group of Fiji girmitiyas.

Introduction

With the abolition of Slavery (1833), global demand for human labor escalated sharply, especially within the expanding British Empire. The unprecedented waves of migration of over 1.3 million Indian workers under the British Empire saw the arrival of 60,965 indentured laborers (girmitiyas) to the Fijian shore under the authority of Colonial Governors, starting with Arthur Gordon and continuing to a number of them until 1920. Of the approximately 61,000 brought to Fiji, approximately

¹ I acknowledge the traditional owners of the land, all our girmit ancestors, my own ancestors - maternal great, great grandfather Beny Sing (Leonidas, 1879) and paternal grandfather Sirdayal (Fazilka-3, 1902) - for surviving their indentures. I also acknowledge Professor Brij Lal for his formidable groundbreaking research on indenture, Dr. Ganesh Chand for his continued encouragement to remain creative in life, Dr. Rajeshwar Sharma and Dietitian Natasha Sheron Lata for support in preparation of this article, and my daughter Dr. Nashika Sharma for proof-reading the article.

8,500 or 14%, perished from a variety of causes within the areas of acquired medical conditions, suicide, homicide and accidents.² Most deaths were recorded early in their stay in Fiji. Fiji recorded the highest incidence of girmitiya death within all British colonies.

This paper examines the health issues during indenture period in Fiji. It uses the Fresh Eyes approach to the data set available in published and unpublished sources. Literature review and analysis of the rations, and caloric requirements for heavy tasking work is undertaken to determine whether inadequate calories provided led to a stage of chronic malnutrition. The original morbidity/mortality dataset is reviewed in light of modern medical diagnosis. Possible causation of morbidity and mortality as determined within this background is discussed.

Mortality Rates

Four years after the end of Slavery, in 1837, the first 'coolie' ship left for Mauritius. A year later, the first ship headed to West Indies (Trinidad). Both ships developed very significant mortalities - for the Trinidad bound ship, the figure was 10.43% of the passengers. Kumar writes: 'Sickness regularly ensued soon after indentured workers shipped out. Heavy mortality on voyages in 1837-38 compelled the government of India to suspend emigration to Mauritius, the first colony to which they were sent. In 1838, indentured emigration started to Trinidad, but it, too, was typified by heavy mortality rates. The Indian government set up an inquiry in 1838 to examine the problem. It revealed a lack of knowledge about the habitual diets of laborers' (2016: 41-2). Even the revised ration regulations 'lacked any accommodation for seasonal patterns of diet and consumption, thus making workers ill with indigestion during their journey' (Kumar 2016: 42).

After the initial high mortality on Mauritius and Trinidad ships, changes ensured that seasonal variations were implemented on the high seas with the addition of *satua* (ground gram) and *chura* (parched rice) to the diets. Provision of additional milk daily for children and lactating mothers are documented with a sheep or goat meat meal once a fortnight (Kumar, 2016).

The colonial government addressed rations in transit, in alignment with religious, traditional and dietary choices. This contributed levelling the caste system. The overall mortality in transit declined over time (see

² The figures are calculated from Agent General (1901:13), Lal (2000: 217) and own estimates.

Table 1). But the first ship to Fiji, *Leonidas* still carried a 3.8% transit mortality.

**Table 1: Transit/ Ship mortality. 1840- 1860
(Ships with 400-500 persons on board)**

Calcutta/ Mauritius mortality	2.92%
Calcutta/ Trinidad	10.4%
Madras/Mauritius	0.64%
Madras/ West Indies	1.64%
Calcutta/ Fiji 1879-1916	<1%

(Source: Kumar, 2016)

The *Leonidas* set sail from Calcutta, in 28 January 1879, and arrived in Fiji on 14 May 1879. However, it was barred from making land at the scheduled port of Levuka on account of cholera outbreak. It was diverted to a secluded island, Yanuca Lailai Island which became the Quarantine station for the *Leonidas* passengers. 498 passengers, comprising 273 men, 146 women and 79 children (defined as being less than twelve years of age) started the journey, but within 3 days at sea there was an outbreak of cholera and smallpox on the ship. 17 passengers died. There was alarm with colonial officials in Fiji when the ship arrived; the officials had only 4 years earlier seen the death of 40,000 Fijians in a measles epidemic. There was no quarantine facility at Levuka, the then capital of Fiji. Yanuca Lailai served as a temporary quarantine station, where fumigation, etc., took place. Fifteen additional passengers died on the island due to dysentery, diarrhoea and typhoid. This left 463 survivors who were released for indenture work on 9 August 1879 after about 3 months of quarantine ([https://en.wikipedia.org/wiki/Leonidas_\(ship\)](https://en.wikipedia.org/wiki/Leonidas_(ship))).

Fiji Rations: 1912

Under the Agreements, the local plantation owners were to provide rations for the first six months of the arrival of the workers on the plantation. The 1912 agreement states as follows

11. Other Conditions-Emigrants will receive rations from their employers during the first six months after their arrival on the plantation according to the scale prescribed by the government of Fiji at a daily cost of four pence, which is at pre-

sent equivalent to four annas, for each person of twelve years of age and upwards.

12. Every child between five and twelve years of age will receive approximately half rations free of cost, and every child, five years of age and under, nine chattacks of milk daily free of cost, during the first year after their arrival.

13. Suitable dwelling will be assigned to Emigrants under indenture free of rent and will be kept in good repair by the employers. When Emigrants under indenture are ill they will be provided with Hospital accommodation, Medical attendance, Medicines, Medical comforts and Food free of charge. (https://en.wikipedia.org/wiki/Indian_indenture_system)

Totaram Sanadya's autobiography documents the insufficiency of rations in detail (see Lal 261-272). Items were provided to the workers on a weekly basis but apportioned on a daily intake formula. However, only three items were on the planter's ration list: sharps, cow peas and ghee (other than salt). Table 2 provides the daily ration supply.

Table 2: Indenture Rations

	Ration pack: Chatak*	Grams	Cal/100 grams	Cal. in ration
Sharps	10	583.2	364	2,122.84
Cow pea	2	116.64	117	135.30
Ghee	0.5	29.16	896	261.27
Total				2,520.59

(* 1 chatak = 58.32 gram)

The cost of this ration pack was deducted from the wages of the workers. In 1912 this was the rate of 4 pence per day or two shillings, four pennies per week.

Tasking work

The girmitya were mostly given task work rather than daily work. This served the plantation owners economically, ensuring that their overseers and sardars could manage their targets easily. Harsh penalties awaited those who did not complete their tasks (Naidu, 1980). Henry Anson, the Agent General for Immigration noted in 1887 that only 8% man-

aged to attain over the minimum statutory wages relating to completed task work (Lal, 2000: 49). Lal documents task work as follows:

it was that amount of work which an average, able-bodied worker could accomplish in six hours of steady work. But the definition and allotment of tasks in the field were left to the overseer who was "to all intents and purposes the sole judge of the fair limits of task work"... Frequently, tasks were set on the basis of what a few handpicked men could do. Tasks could be increased if the worker accomplished it before time; it could even be changed while the work was still in progress. Then there were cases of overseers using the amount of work done on other plantations as the measure for their own allotment without allowing for variations in terrain, soil type, ground conditions or the number of times the ground had been worked over. On the larger plantations, when the production target fell, overseers competed to see "who can get the maximum amount of work done for minimum amount of pay"...

In Fiji in the 1880s and 1890s, workers could complete only two thirds of the tasks set, but got little or no credit for the amount of work accomplished..... The Attorney General observed that: "It may be stated as a general legal proposition that if a person engages to perform a given task or a piece of work for a given wage and fails to perform such a task, he forfeits all claim to the wage: for the performance of the task is the condition precedent to the payment of the wage..." (Lal, 2000: 48-9)

By way of example, a full task included: 1200-1300 feet long x 6 feet wide row of hoeing within 6 and ½ hours of continuous work at a shilling a day. Women were paid 9 pennies for ¾ of that length as a full task (Lal, 2000; Sanadhya, 1914; Naidu, 1980). Other tasks included those relating to virgin land preparations for plantation, digging drains, soil preparation, planting rice, sugar, bananas, cocoa, hoeing, harvesting of various crops including sugar cane. 87% of all girmitiyas were under 26 years of age yet only 8% completed full tasking work overall.

Energy Expenditure

Literature review and analysis of the rations, caloric requirements for heavy tasking work can be examined to determine whether adequate calories were provided. Table 3 shows these calculations; the Harris-

Benedict Equation is used to calculate basal energy expenditure.³

Table 3: Calculated Total Maintenance Calories (MC)

TDEE*	Males	Females
Average Age (years)	25	25
Average Weight (kg)	65	55
Average Height (cm)	170	160
Average BEE (Cal)	1658	1342
Activity factor (Hard labour)	2	1.75
Injury factor	1	1
Maintenance Calories	3,316	2,593

(* TDEE = BEE x Activity Factor x injury factor;
BEE=basal energy expenditure)

The rations, therefore, provided calories which were short of the minimum maintenance calories required. For males the shortfall was a massive 24%.

Other critical diet issues included monotonous diet, and absence of first class protein from the rations.

Given the above there is a distinct possibility that chronic malnutrition was underlying the very high morbidity and mortality statistics in Fiji.

Girmitiya Deaths

The annual reports of the Agent General for Immigration provided detailed statistics on death of the girmitiyas. Lal (2000: 217) has summarised these; the documented causes of death for the Fiji Indian indentured population is provided in Table 4.

³ The Basal Energy Expenditure (BEE) is calculated using the Harris-Benedict Equation. This equation utilizes ideal body weight, gender and height as the variables The formulae are as follows:

$$\text{Women BEE} = 655 + (9.6 \times \text{ideal body weight in kg}) + (1.8 \times \text{height in cm}) - (4.7 \times \text{age in yrs})$$

$$\text{Men BEE} = 66 + (13.7 \times \text{ideal body weight in kg}) + (5 \times \text{height in cm}) - (6.8 \times \text{age in yrs})$$

Table 4: Documented Causes of Death, 1900-1915

Causes	1900	1901	1902	1904	1905	1906	1907	1908	1909
Anaemia	4	8	-	-	-	6	2	5	4
Diarrhoea	3	8	7	3	-	-	-	8	15
Dysentery	10	22	12	17	39	52	28	24	28
Tuberculosis	19	18	17	9	5	15	20	5	16
Syphilis	2	3	3	2	6	4	7	5	1
Debility	2	3	1	1	3	12	1	2	6
Respiratory ailments	12	10	17	27	52	35	24	14	5
Circulatory ailments	3	7	3	12	9	2	4	13	5
Digestive ailments	10	10	13	32	15	29	30	12	11
Suicides	8	6	11	7	14	8	17	12	8
Other	67	80	57	73	79	90	134	193	148
Total	140	175	141	183	222	253	267	293	247
Total Indent. adult pop.	4731	6618	7170	8591	8684	9350	10182	10255	10374
Mortality Rate (%)	2.95	2.64	1.96	2.13	2.56	2.7	2.62	2.86	2.38
Causes	1910	1911	1912	1913	1914	1915	Total	%	
Anaemia	5	2	7	8	9	9	69	1.6	
Diarrhoea	-	9	-	-	-	-	53	1.3	
Dysentery	83	69	63	55	24	20	546	13.1	
Tuberculosis	-	68	72	55	67	27	414	10	
Syphilis	11	4	4	4	2	-	58	1.3	
Debility	13	6	7	-	-	-	57	1.3	
Respiratory ailments	104	18	15	22	15	21	391	9.4	
Circulatory ailments	18	10	24	20	13	21	164	4	
Digestive ailments	47	29	27	25	16	10	316	7.6	
Suicides	11	18	23	22	12	24	201	5.1	
Other	183	149	189	161	142	137	1882	45.3	
Total	476	382	431	372	300	269	4151	100	
Total Indent. adult pop	10961	12526	13167	13617	13074	11922	-		
Mortality Rate	4.34	3.04	3.2	2.73	2.29	2.25			
Note: 'Other' includes									

(Source: Lal, 2000: 217)

Discussion

The original morbidity/mortality dataset is interpreted in light of modern medical understanding. A growing body of research on critical nutrition studies in the contemporary western context has emerged during the last decade. Kumar (2016) refers to Dixon (2009), Lieffers (2010) and Mitra (2012). The principles used by these experts may not be appli-

cable here without a fuller data set than was available for this study.

The analysis of energy expenditure undertaken here shows that the shortfall of calories and the lack of protein sources led to malnutrition on plantations. This, combined with infestations, poor sanitation, and lack of easy access to medical assistance would explain at least in part the high levels of morbidity and mortality.

The comments by the Emigration Agent A.C. Stewart on the health status at the girmitya at departure in Calcutta is of interest. Strict recruitment criteria were followed and unfit recruits are rejected before shipment and necessary evidence was documented. Henry Anson had made a similar comments a decade earlier in Fiji as Agent General in his annual reports (Lal, 2000). It follows that antecedent morbidity was possibly a low probability. Consequently, acquired pathologies would then be responsible for the Fiji plantation's high morbidity and mortality.

Medical technology has progressed significantly since indenture. The terminologies used in the annual reports on causes of death need to be addressed in this context.

First, diarrhoea, dysentery and anaemia are listed in various Agent Generals reports as leading causes of death. But it is now known that these are only symptoms and signs of a far-ranging plethora of causes. Diarrhoea and dysentery can be a continuum of the same disease process or be differently caused. Diarrhoea and dysentery are associated with electrolyte disturbances which can trigger neurological, cardiac and/or abdominal symptoms, obvious to confuse the situation, even to a trained eye.

Likewise, anaemia can be a background entity, causing various symptoms, yet not the direct cause of death unless one refers to acute haemorrhage, that is, antepartum and post-partum haemorrhage in pregnancy and childbirth. The annual reports also refer to hookworms as a cause of death. This looks strange and misplaced. How could one arrive at a diagnosis of a hookworm death is unclear. The worms are too small to cause asphyxiation. Anaemia can be an underlying condition which predisposes one to other illnesses especially if chronic malnutrition were present.

The diagnosis of syphilitic deaths is equally questionable. Primary and secondary syphilis do not kill and leave no specific stigmata. Tertiary syphilis (that is neuro syphilis) and cardiovascular syphilis develop over a 10-15-year period to manifest signs. This period would take them out of the indenture contract period, thus out of the statistical scope presented in the annual reports on indenture. Were the signs to manifest during a worker's active indenture period, it would mean that the worker was ex-

posed to this by the time he/she was 10-15 years of age, implying a very early age of becoming sexually active; this is highly improbable. In addition, what would have been the source of information on syphilis as the cause of death, particularly in the absence of pathological services in that period in the plantation environment.

The scenario of congenital syphilis in stillbirths and pre-term/underweight neonates possibly was a clinical diagnosis. The question remains as to the degree of variation it contributed in the statistics when significantly high child mortality was noted. If indeed syphilis was a cause of death, the question remains how and when the diagnosis was made. General Laboratory diagnosis is mandatory for diagnosis to establish this. But colonial medical services were rudimentary. There is no record of any thorough clinical examination being conducted. Likewise there is no record of post-mortems being conducted. Syphilitic deaths are, therefore, highly unlikely. What is likely is that the medical teams were waylaid by observing tropical ulcers and misdiagnosing these as primary syphilis.

Interestingly, cholera and typhoid are mentioned as causes of death in India and on transit ships in that era, yet these are not mentioned in the statistical reports as causing any death from 1900 to 1915 on the plantations.

What is known is that the level of medical expertise during indenture, and that particularly available to the indentured workers, was not much more than rudimentary. Documentation, therefore, was likely to remain fragmented and incomplete. If medical expertise during indenture could barely diagnose and differentiate typhoid from cholera, and diarrhoea from dysentery, it is likely that it could not identify the underlying causes of anaemia labelling these as hookworm deaths. There is a lot amiss in the statistics provided in the annual reports submitted by the Agent General of Immigration.

Life on plantations was solely geared to work the labourer to maximum capacity without significant care for environmental sanitation, nutrition, infestations, ill-health and emotional wellbeing. In this environment, ill-health and death stalked the girmitiya at every juncture in this era. That mortality remained very high from the very start attests to this fact. Some measures on environmental, sanitation and space provisions in the labour lines, were introduced progressively impacting positively on mortality statistics. Girmitiya ill-health, and death, after all, was costly to both, the employers and the colonial government. This, however, is not reflected in mortality outcomes.

The indentured Indian migrant suicide rate was highest in Fiji, not

only topping all other indenture destinations but also exceeding the rates in the Indian States of girit origin. This was especially a problem with single males, particularly with the southern Indian workers; a significant number took place within the first six months of arrival. 333 suicides took place between 1880-1920 in Fiji (Lal, 2000:199-200). Of all the suicides, 25% took place within six months of arrival, 30% within a year and close to 60% within three years of arrival. Without overplaying suicide statistics, it did contribute to 5% of all deaths.

High Indian migrant infant mortality contributed to just under 50% of the overall Indian mortality. The blame was unfairly placed by various Agent Generals of Immigration on mothers being incompetent in child rearing. The reports of the Agent Generals, however, scarcely mention absence of reasonable social conditions on the plantations, lack of child care, lack of child rearing support, lack of sufficient breaks for mothers to feed and take care of their new borns and toddlers, including restricted breast feeding opportunities, and exposure of the infants to the vagaries of nature. The death of children in Fiji remained higher than other sugar colonies. Neonatal deaths and deaths of infants below one year averaged just over 20% each; the 1 to 10 year old death was reported as in excess of 10%. Child death rates contributed to 48.8% of all deaths in indentured Indian population. The Agent Generals' reports fail to holistically review environmental sanitation, water supply and quality, individual nourishment, tasking work pressure on pregnant, lactating women, exposure to the elements of nature, and the absence of adequate nurseries.

Likewise female mortality raised its ugly head in Fiji during the indenture period. In the 1900-1909 period, 450 out of 1180 deaths (38% of all deaths) were noted for the female gender (Duncan, 2000: 291); the average ratio of female to male indentured workers was 30 : 100. Childbirth, heart troubles and syphilis are mentioned as causes. Other contributions are from worm infestation, intestinal conditions and suicide.

Homicides and suicidal fatalities were also not discussed in any format of medical knowledge in the Agent General annual reports. There is no mention of any medical support to prevention, or raising awareness of social ill health. There is no reference in the reports to any public awareness, or of any collective or individual counselling support within the group or by the plantation owners, or the Colonial government hierarchy. It is small wonder that both components contributed significantly to high morbidity and later mortality..⁴

⁴ Jansen et.al., also attribute high death rates to malnutrition: 'Poor quality food, together with living conditions and hard work, caused much bad health and a high death

Conclusion

This paper has calculated the daily minimum caloric requirements for indentured workers for the type of work they were required to do. This shows that there was at least a 24% shortfall in the caloric requirements for adult male workers in the indenture ration packs. Workers were provided these packs for 6 months upon starting the indentures. The shortfall, together with lack of any provisioning of reasonable protein sources, are compelling factors in causing malnutrition. Given the massive shortfall in the minimum dietary requirements for the type of work being done on plantations, it is proposed that malnutrition on the plantations during indenture was a chronic factor.

This paper has also reviewed the original morbidity/mortality dataset in light of modern medical diagnosis and gaps highlighted. It is proposed that the causes of death listed in the official reports could not have been determined with any scientific levels of confidence. There is no documentation or record on indenture on the factors which the officials used or a checklist, to identify the cause of death of a girmitiya.

The paper proposes that chronic malnutrition in indentured workers could have been the underlying cause of most of the deaths, which are quote erroneously listed in official reports as resulting from a number of other causes. Compounded with other variables like poor sanitation, parasitic exposure, hard tasking labour, physical and mental torture, chronic malnutrition on Fijian plantations contributed to the highest morbidity and mortality rates within all of the Britain's sugar colonies.

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rate. During the first 15 years this was 25%. A threat from the Colonial Office that the indentured labour scheme would be discontinued, unless conditions improved, had effect. By 1896 the death rate had fallen to 5.3% due to better food, water supplies and medical care' (1991: 298).