

## Why the Once Fabled Health of Punjabis Is in Decline

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Asia-Pacific Research, October 24, 2024

Region: [South Asia](#)

Theme: [Biotechnology and GMO](#), [Society](#)

*A widespread tendency in India used to be to identify Punjab's villages and Punjabi farmers with good health and strength but in recent years a lot of news from rural areas of Punjab relates to a range of serious health problems including increase of cancer. What happened? Good health is to a large extent related to good nutrition and in this context the reputation of the Punjabi village as a provider of high nutrition has suffered.*

Loss of biodiversity is generally also reflected in a loss of nutrition. Pulses constitute the most basic source of protein for villagers but as traditional mixed farming and crop rotations were disrupted by the green revolution, the cultivation of pulses declined very steeply, something that was very harmful for soil health as well as human health. Of course people here could still buy pulses from the market, but this is not the same as much healthier self-cultivated crop, and with increasing price of pulses many of the poorer people can also afford to buy much less of pulses from the market. Similarly, even the most delicious and nutritious dish of Punjab makki ki roti and saag suffered in terms of decline of quality and availability as the cultivation of maize and mustard was reduced significantly and their availability as self-cultivated high quality foods declined greatly, while the availability of home-made ghee, butter and lassi (milk-based products) also declined.

When a wide diversity of crops are grown in villages then it is more likely that more balanced nutrition will be available to villages without incurring cash expenditures. On the other hand monocultures are likely to be associated with loss of balanced nutrition, particularly for those small farmers with limited capacity to meet balanced nutrition needs using cash purchases. Similarly, overall reduction of indigenous trees and other greenery in villages is also associated with loss of nutrition particularly for weaker sections.

Image: Pulses for sale in a Darjeeling market (Licensed under CC BY-SA 2.0)



The Punjab Environment Report (2007) has pointed out significant decline in important nutrition crops like pulses and oilseeds in Punjab. To quote,

“the production of sugarcane (in term of Gur or jaggery) decreased from 527 th MT in 1970-71 to 486 th MT in 2005-2006 registering a decrease of 8%. The production of oil seeds and pulses have shown a decreasing trend from 233 th MT and 305 th MT in 1970-71 to 92 th MT and 26 th MT in 2005-06, registering decrease in production by 60% and 90%, respectively. The production of other cereal (and millet) crops in the state like maize, bajra, barley and jowar have been decreasing sharply mainly due to

decrease in the area under these crops.”

In the context of the alarming reduction in the cultivation of pulses here it is useful to know that a cereal pulse combination (daal-roti in this context) is of great importance in improving overall nutrition. As Frances Lappe and Joseph Collins have pointed out in their development classic ‘Food First’,

“These combinations create more biologically usable protein than if the diet centered on only one food. When eaten together, the two foods, because of contrasting amino acid patterns (the building blocks of protein), make up for each other’s weaknesses. Thus, if Green Revolution grain displaces legumes in the traditional diet, not only does the overall protein intake fall, since legumes have two to four times the protein content of grain, but just as critical, the balanced combination of grains and legumes that improves the biological usability of protein is also undercut.”

High and imbalanced use of agro chemicals also results in serious nutrition problems. As pointed out by prominent nutritionist C. Gopalan, micronutrient deficiencies “are likely to be eventually reflected in impaired nutritive value of food grains grown in such soils.” In addition, high amounts of nitrate in crops can create serious health problems. Richard Douthwaite has written in his widely discussed book ‘The Growth Illusion’,

“Nitrogenous fertilizers can raise the amount of nitrate in the final crop to four or five times the level found in the compost-growing equivalent, while at the same time cutting vitamin C and dry matter levels. This change is potentially serious, since nitrates can be turned into powerful carcinogenic nitrosamines by bacteria found in the mouth, while vitamin C has been shown to protect against cancers.”

Similarly, excessive use of pesticides has led to serious contamination of food and the resulting health hazards. A comparison of per hectare usage of pesticides with other Indian states indicates that Punjab is ahead of most states in reporting high pesticide use.

“The problem, however, is that of mismanagement and non-judicious use resulting in adverse environmental impacts. Pesticides not only contaminate the ecosystem but also bio-accumulate in the food chain and can be traced in plant and animal tissues causing serious health hazards. As per World Health Organization estimates, pesticides lead to one million pesticide poisoning cases and 20,000 deaths every year globally. Results of various studies conducted in Punjab indicate residues of chemical pesticides in human beings, milk, water, vegetables and other food products at levels, which are dangerous for human health.”

Activists of Kheti Virasat found high levels of pesticide related health risks including cancer in the cotton belt of Malwa using excessive pesticides, and these serious health problems were later confirmed by others including the Post Graduate Institute of Medical Research. This research has indicated the prevalence of serious health problems including reproductive disorders and birth of mentally retarded children, apart from cancer. Tap and ground water laced with carcinogenic chemicals and high levels of arsenic, iron and chromium was found. Serious health problems like neurotoxicity and immune-toxicity were identified.

Thus with cultivation of several healthy food crops declining steadily and with the staple foods getting less nutritious due to being grown in highly depleted soil and then also getting

contaminated by agro-chemicals, the nutrition was bound to suffer and the nutrition base was also bound to suffer, and this is what has happened. In addition with fall in water table and with contamination of water sources, decline of water quality has been a serious problem in many villages. In research taken up by Dr. Paramjit Kaur Gill and Sukhdarshan Singh in Mansa district 94% of the respondents said that the water quality has changed in recent times. So if water used for drinking, cooking and irrigation has suffered a decline of quality, then this is likely to have an adverse impact on health.

Key indicators for Punjab from National Family Health Survey (NFHS) tells us that according to NFHS-3, 28 per cent of the children were stunted, 9 per cent were wasted and 27 per cent were under-weight. Between NFHS-2 and NFHS-3 the percentage of wasted children went up from 7 to 9 while the vaccination coverage decreased from 72 per cent to 60 per cent. In 2015-16 the proportion of women with anaemia (with haemoglobin levels below 10.9 g/dl) was 53% while by 2019-21 this had increased further to 59%. The rate of severe anaemia among women (haemoglobin levels below 7g/dl) increased during 2015-16 to 2019-21 from 0.5% to 3%. Among children less than 5 years of age, during 2015-16 to 2019-21, those having anaemia went up from 57% to 70% while those having severe anaemia up from 1.3% to 5%.

To determine the prevalence and risk factors of under-nutrition amongst under-five children living in an urban slum of Ludhiana, a cross-sectional survey of 200 randomly selected under-five children was carried out on the basis of selected samples taken out of the total 1450 children living in Field Ganj, an urban slum area of Ludhiana, Punjab. "The findings reveal that 74 per cent of the children were found to be stunted, 42 per cent of them wasted and 29.5 per cent of them were under-weight. Female children, children aged 48-59 months, children born to older mothers aged 30-49 years, children with >3 siblings, low birth weight, those exclusively breast-fed for >6 months or <4 months, having an illiterate mother or unskilled labourer father were observed to be at the highest risk of being under-nourished."

At the same time health data of Punjab reveals other kind of unhealthy trends also such as increase of obesity, increase of mental health problems and very high levels of various kinds of substance abuse.

A particularly disturbing aspect of the health situation in Punjab in recent times has been the increase in the incidence of serious diseases particularly cancer. As The Indian Express reported,

"Confirming Punjab government's worst fears, a door-to-door survey of the health department — covering almost 98 per cent of the state's population — has found that the incidence of cancer in Punjab is higher than the accepted national and the international average."

Another report in The Tribune filed from Bathinda stated,

"Yet another year has passed but the number of patients boarding from here the infamous "cancer train" to Bikaner in Rajasthan for the treatment of the disease has increased... Besides cancer, other diseases have also taken roots in the area because of contaminated groundwater. The disease is not only confined to Bathinda but has also over the years spread its tentacles in the entire Malwa belt consisting of the districts of Muktsar, Faridkot, Moga, Barnala, Mansa and Ferozepur... The area has emerged as the epicentre of the disease and has come to be known as the cancer belt

of Punjab...A series of studies conducted by the Chandigarh-based PGI, Bhabha Atomic Research Centre (BARC) and various other reputed institutions have indicated that drinking water being supplied particularly in the Malwa belt was a cancer cocktail as it was a combination of pesticides, heavy metals and fluoride. Besides cancer, this was causing serious deformities among children. Residents of the Malwa belt believe that many people in the area became prone to cancer only after the Green Revolution was launched followed by the introduction of Bt cotton for which farmers indulged in an excessive use of pesticides and insecticides badly contaminating groundwater.” (report published in year 2010)

Apart from increasing burden of some serious diseases like cancer, accidents are also increasing at a fast pace including road accidents, occupational accidents, accidents involving hazardous substances and implements as well as intoxicants, increasing the burden of injuries and disabilities apart from resulting in many deaths.

Despite increasing health problems, public health facilities and infrastructure have remained very inadequate. According to statistics of the Union health ministry ( Health dynamics of India, infrastructure and human resources 2022-23), ( as reported in The Times of India, September 16 2024), Punjab’s urban areas with a population of 12.9 million need 258 primary health centres but have only 124. Punjab’s rural areas with a population of 17.8 million people in 12,784 villages need 3575 sub-centres but have only 2857. There are 397 functional PHCs against the need for 595. 148 community health centres are needed but only 84 are available. Urban PHCs have 119 specialist doctors against sanctioned posts of 336. Urban PHCs have 161 medical officers against sanctioned posts of 236. Rural CHCs have only 55 specialists against the need for 336. Specialist doctor vacancies decreased by 45% in rural CHCs during 2005-2023. Rural CHCs have only 17 paediatricians against 84 positions and 8 physicians against 84 positions. Among 397 functional PHCs in rural areas only 184 have round the clock services, 13 have an operation theatre and 193 have at least four beds. Only 881 out of 2857 sub-centres have separate toilets for male and female patients. ( report by Vinod Kumar titled ‘It’s not just doctors, pb. health facilities are inadequate too’)

Despite increasing health problems, share of health and family welfare in the Punjab budget declined from 6.15 per cent in 1998-99 to 3.62 per cent in 2010-11. As Sucha Singh Gill observes,

“Since 1981, there is no expansion of health infrastructure both in urban as well as in rural areas... As the government has decided not to expand public health care in the state, the private sector has been allowed to open five star modern hospitals in the urban areas. There are also proposals to open some hospitals under public private partnership (PPP) mode. The decision to allow expansion of private health care is accompanied by deterioration in public health care in the state. This is reflected in the shortage of manpower in rural health service institutions. In rural health service there is a shortage of 58.6 per cent doctors in primary health centres and community health centres, 67.2 per cent shortage of health assistants/auxiliary nurses and 55.7 per cent shortage of lab technicians...Although the state has a very good rural health infrastructure but it remains non-functional. There are glaring deficiencies in machinery, equipment, appliances, buildings and residential accommodation.” (CRRID, 2013).

An important cause of declining health in Punjab relates to big increase of substance abuse

of various kinds and this as well as other aspects of mental health problems need more attention and better attention, based on more thoughtful response.

Health improvement needs effective steps at several levels. Public health facilities must expand and improve in significant ways, exposure to hazardous substances and intoxicants must be checked, nutrition must be improved, environment protection must get much more attention and farming must move more and more towards natural farming with big benefits of protecting environment and health. The poorest sections including rural landless workers should get much more justice based opportunities and the health needs of migrant workers must also get the due attention.

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Featured image: A selection of dried pulses and fresh legumes (From the Public Domain)

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