

Current Asbestos Exposure and Future Need for Palliative Care in India

Abhijeet Vasant Jadhav, Nilesh C Gawde

Centre for Public Health, School of Health Systems Studies, Tata Institute of Social Sciences, Vikas Anvesh Foundation, Pune, Maharashtra, India

Abstract

Asbestos-related diseases (ARDs) are incurable but entirely preventable. Due to India's continuing use of asbestos, ARD patients will increase to a high number in the next three to four decades. This will increase the burden on palliative care system which is in nascent stage presently. Palliative care is the mainstay of the management of ARDs. Unfortunately, the burden on palliative care is likely to increase due to multiple factors contributed by India's demographic and economic changes. In the near future, there will be at least 12.5 million ARD patients and 1.25 million asbestos-related cancer patients worldwide, and half of these will be in India. It is high time to introspect about our ability to engage with this future problem. The paper also discusses the organization of this future problem of ARDs and possible action points toward future access to palliative care for ARD patients.

Keywords: Asbestos, cancers, palliative care, pneumoconiosis, public health system

INTRODUCTION

Asbestos is a naturally occurring mineral resistant to heat, chemicals, electricity, and physical forces. It cannot be destroyed but can be made into various forms such as rope, cloth, sheets, blocks, and many others. Therefore, it has several applications, especially in industries which deal with high temperature, strong chemical or physical forces, for example, boilers, brake-linings, insulators, and cement.^[1] The hazardous health effects of asbestos were identified as early as 1899.^[2] International Agency on Research on Cancer concluded by 1977 that asbestos is a strong carcinogen and classified it as "Group-1" carcinogen.^[3,4] Apart from causing mesothelioma and cancers of lungs, larynx, pharynx, and ovary, it is also capable of causing a disabling fibrotic lung disease called asbestosis as well as pleural plaques and benign fibrous skin lesions, collectively referred to as asbestos-related diseases (ARDs).^[5,6] Most of the ARDs have a very long latent period ranging from 20 to 35 years, and all of these are progressive incurable diseases. Due to long latency periods and slow progression, these diseases are frequently not identified as asbestos related.^[5-7]

Humans can get exposed to asbestos exposure in several ways. Primary exposure is the direct exposure to individuals

while directly handling asbestos or its products as in mining, milling, and occupations such as ship breaking, pipe, and boiler insulation and repair. Secondary exposure is indirect exposure to the family members of those exposed primarily through their contaminated body and clothes (also known as "take-home" exposures). Environmental exposure is through the local physical environment where air, soil, and water have got polluted due to asbestos which typically happens around the asbestos mines or factories processing it.

The World Health Organization (WHO) estimates that globally 125 million people are currently exposed to asbestos at work, and every year around 107,000 people die due to ARDs by just occupational (primary) exposure alone.^[8-10] If we consider all forms of exposure, deaths due to ARDs have been estimated to be 234,823.^[11] Over the last two decades, asbestos consumption by countries such as India, China, and Indonesia has increased substantially.^[12] In these countries, secondary and environmental exposures are also likely to be

Address for correspondence: Dr. Abhijeet Vasant Jadhav, D-204, Dreams Belle Vue, Uttam Nagar, Behind Crystal Honda, Bavdhan, Pune - 411 021, Maharashtra, India.
E-mail: abhijeetjadhav1234@gmail.com

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very high due to lack of control at occupational setups.^[13] At present, half of the occupational cancers in the world occur because of asbestos, and its continued use in high quantities can elevate this proportion further.^[8] In the last 10 years (2007–2017), the deaths and disability-adjusted life years due to ARDs of occupational origin have increased by 19.6% and 15.3%, respectively.^[11]

Starting with Iceland in 1983, a total of 65 countries have banned asbestos by June 2018.^[14] Many others have restricted its use. India continues to import, use, and process asbestos in huge quantities freely.^[1,15–17] It has future implications on health care and palliative care systems. It is important to identify and mitigate impending problems to limit future impacts on the palliative care system, which is at its nascent stage in India. This paper explores the future impact of ARDs on palliative care system due to the current asbestos exposure.

POLICIES RELATED TO ASBESTOS IN INDIA

There is no restriction in India on the use of asbestos. Furthermore, there is no restriction on its import–export as per the Foreign Trade Policy, 2015–20.^[1] India stopped mining asbestos very recently, mainly due to low asbestos quality in these mines and reasons related to profitable import. Till 2015, at least 17 asbestos mines were active. The import and recycling of asbestos is the chief source in India. In 2016–17, India imported 310,592 tonnes of asbestos with 355,686 and 396,493 tonnes in previous years, respectively.^[1] There is an active recycling industry in India which re-uses tonnes of asbestos. Apart from internal consumption, some asbestos is processed to finished goods and is exported to other countries.^[1,12] In recent years, India competes with China to be the largest consumer of asbestos in the world. Other countries among top user are Indonesia and the Russian Federation.^[1,18,19] Regulatory governance has been weaker in India and has resulted in poor working conditions, lack of occupational safety, and health measures. It is true for most such working places and situation in the informal industry is further poor.^[12,20] The workers are often illiterate or semi-literate and are neither aware of the occupational health risks nor are they powerful enough to recognize and fight for their rights. The exposures, therefore, remain unchecked in a policy paralysis environment. These industries such as ship-breaking, boiler breaking, or automotive parts recycling thrive in low- and middle-income countries like India among the poorest sections of the society.^[17]

Asbestosis- and asbestos-related cancers are notifiable as per the subsection-1 of Section 25 of the Mines Act, 1952. However, no ARDs were reported as per the 12th 5-year plan document of the government.^[21] This is both due to incorrect diagnosis and under-reporting of diagnosed ARDs.^[20] The same report points out the need to know the hidden ARD burden.

Given the weaker regulatory governance, not all workers receive medical examinations and those who receive; ARD is either missed or not reported to protect the commercial interests of the industry. Among those who get medical examinations,

ARD status if found is kept confidential. At present, the Indian health system lacks the capacity to diagnose, treat, and rehabilitate these cases nor is the law implementing agency strong enough to prevent the exposures.^[20,22]

HIDDEN BURDEN OF ASBESTOS-RELATED CANCERS

The death toll due to asbestos-related cancers is rising and is estimated to be 234,823 globally in 2018.^[11] Major proportion of these deaths are likely to be in India as the nation is an asbestos-processing hub. Official numbers do not reflect this which is related to limited capacities within the Indian health system as discussed already.

Mesothelioma, a malignant cancer of pleura which is specifically attributed to asbestos exposure and its risk increases by 7–8 folds among exposed.^[23] Among the nonexposed individuals, the incidence ranges from 2 to 4/100,000 normal population.^[7] Therefore, it can be deduced that incidence may be between 14 and 32/100,000 exposed individuals depending on the quantum of exposure and type of asbestos. Standardized incidence ratio of mesothelioma among heavily exposed workers has been estimated to be 39.9/100,000 person years.^[24] Globally, deaths due to mesothelioma have been estimated to be 29,909 globally, out of which 27,447 are due to occupational exposure.^[11] For every 170 tonnes of asbestos consumed, there is one mesothelioma death.^[25] With about 350,000 tonnes of annual use,^[1] India alone shall have 2000 plus mesothelioma deaths.

The incidence rate of asbestos-related lung cancers is 3.3–31 times more than that of mesothelioma.^[7] Incidence has been estimated to be 110.9/100,000 after primary exposure.^[26] The deaths due to asbestos-related lung cancers were seven times higher than that of mesothelioma among those with primary exposures.^[11]

All these cancer patients need chemotherapy, radiation, and surgeries at some stage, but their primary objective is to retard the progress of cancer and improve survival but not cure. The patients will live with pain and other health ailments with palliative care needs. The costs of treating these cancers are very high.^[27,28] These patients and their families are not able to afford the treatment or palliative care as catastrophic expenditures are incurred in the initial phases of cancer treatment.^[20]

BURDEN DUE TO OTHER ASBESTOS-RELATED DISEASES

The incidence of asbestosis in India varies from 20% to 60% among primarily exposed depending on intensity, duration of exposure, and asbestos type.^[29–31] There are limited studies with large samples for secondary and environmental exposures in India. Existing evidence indicates that exposure quantum in India is likely to be very high for all types of exposures, and the incidence of ARDs is likely to be very high.^[17,20,32]

Asbestosis patients suffer from progressive lung parenchymal fibrosis induced by the immune system, which slowly destroys the elasticity and recoil of the alveoli, hampering normal blood

oxygenation. This leads to progressive lung disability, and once it sets in, it cannot be stopped or reversed. The patient cannot get enough oxygen, becomes extremely breathless, weak, and local immunity of the lung deteriorates.^[31] This disease represents a larger threat to future palliative care due to two main reasons. Apart from very high incidence rates, these patients depend on palliative care for long due to longer survival duration near the terminal illness, compared to mesothelioma and other cancers.^[20] Even if we consider minimal reported incidence at 20%, there will be a huge number of people with asbestosis over a period of the next three decades. The needs of intensive palliative care are enormous, especially near the end of life.^[33,34] It has been established that there is no safe way to use asbestos. These diseases have long incubation periods, and the need for palliative care shall remain for three to four decades even after the complete ban of its use.^[15,35] Since asbestos is already present in various products and is part of the built environment, exposures will continue to occur even after complete ban, albeit at a lower level.

ACTION NEEDED TODAY TO ADDRESS FUTURE NEEDS

To reduce the future ARDs in India to a minimum, policy changes resulting in a complete ban of asbestos use and import is essential. India should walk the path of those 65 countries who have done this already, at least in time-bound and stepwise manner if not immediately. Such a policy change will protect not only the large Indian population but also the people across the countries to which India exports asbestos products.

Although ARDs are chronic and incurable, the quality of life (QOL) may be improved if patients are diagnosed early. If the screening is done among exposed individuals, it is possible to diagnose many at the earlier stage of the ARD, and they can be put on the interventions based on palliative care to improve QOL though not curative treatment. More thrust should be given to developing interventions to improve QOL and retard the progress of ARDs.^[33] As most of the high-income group countries have banned asbestos long back, investing in the related research will not be the agenda for such countries. It will have to be the priority for India.

In India, there is no specialization of occupational health in clinical medicine, unlike many other countries. As far as, tertiary level care is concerned, there are very few specialty hospitals in India and also very few occupational health departments in tertiary hospitals. There is a need to establish occupational health as well as palliative care as strong disciplines with research and services to address current and future needs of the health-care system. To summarize, both asbestos ban and a better health system response to ARDs are needed. Ban alone will not be useful as the burden of ARDs shall continue to exist for decades, and there is a need for palliative care.

PALLIATIVE CARE PROVISION IN INDIA

As per the WHO, currently, 40 million patients need palliative care annually in the world, and only 14% have access to some

form of care. Currently, 60% of the dying Indian population needs palliative care per year,^[36] and only 1%–2% of Indians have access to some form of palliative or supportive care.^[37,38] As if now palliative care is not a public health priority in India, and the existing structure is rudimentary and insufficient. Most of the palliative care facilities are in cancer treatment centers, that too in urban areas and by large most of palliative care services are catering to cancer patients.^[36]

Using existing literature and data, it is possible to understand the future burden on palliative care due to cancers and other diseases. As per the WHO estimates for 2018, the incidence of all types of cancers was 1,146,672 for India, and by 2040 this will reach to 1,891,621/year. The death burden due to cancer at present is 784,821, and it will be 133,434 by 2040.^[39] Even among the patients who reach tertiary level cancer centers, 96% currently do not have proper palliative care access.^[40] The existing palliative care system is not enough for cancer patients alone, centers catering to other noncommunicable conditions are fewer.^[36,38] With the epidemiological transition, the prevalence of noncommunicable diseases (NCDs) are rising, and they will also create a strain on the palliative care system. Future projections indicate that 6 million people per year will need palliative care in India.^[36]

The existing palliative care delivery structure is mainly around urban tertiary hospitals in piece-meal status. The Directory of Palliative Care Services by Pallium India lists only 159 centers in India outside of Kerala. In Kerala, there are 316 centers, and this state is considered as a successful model of community-based care network and services.^[41] Models of community-based palliative care should be pursued well. There is a need to invest in the creation of a structure which is connected with formal health-care delivery system at all levels and the community through volunteers, nongovernmental organizations, self-help groups, and other civic bodies. Such efforts should be facilitated and studied well for future adaptation. Then only, it will be possible to address tomorrow's need for palliation.

MOVING FORWARD

As per the World Health Assembly, health systems are supposed to provide palliative care as a part of primary health care, and it is an ethical responsibility of health systems. No needy person should be kept devoid of it.^[42] India, its National Health Policy-2017, has explicitly focused on palliative care in one of the objectives for the first time and included it in primary health-care components. Furthermore, higher education in palliative medicine has started in India recently. Many state governments have started working toward state-level palliative care policy.

It is essential to understand that the people who get primary exposure are manual or semi-skilled workers from mines, factories which process asbestos or people involved in transportation, rarely onsite engineers, or other skilled workers. Today, mostly unskilled or semi-skilled workers

are unorganized and devoid of their entitlements like health insurance. When these people fall sick with these progressive diseases, they cannot cope with the expense of specialist care.^[20] They need health insurance not only for treatment but also for palliative care. It should be irrespective of their formal or informal nature of work contract. There is a need to establish screening programs for the exposed workers, their families and the sites where asbestos is in abundance (such as abandoned mines). The effects of secondary and environmental exposures need to be studied well from epidemiological, economic, and policy angle.^[12,13,43,44] The number of newly diagnosed people due to these neglected types of exposures are likely to be high and to provide them proper care might add to the burden of specialized care as well as palliative care. It is essential to organize community-based screening and palliative care programs as well as rehabilitative efforts.

It is more important to highlight these ARDs now because a significant amount of burden and suffering of future can be reduced by appropriate policy changes now. It is evident that the number of people who will require palliative care due to ARDs will keep on increasing for at least 30 years, even after the complete ban of asbestos. Rising NCDs also indicate that we will have ARDs and other NCDs as comorbidities which shall compound palliative care needs. This one substance will lead to a considerable burden on palliative care structure, which is at present in a nascent phase.^[33] It is important to identify knowledge gaps and action points in the specific context of ARDs and further work on those.

Even though ARDs are largely avoidable, in future they are likely to create a considerable burden on tomorrow's palliative care system, and the country needs to be ready for the same.

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