

Comment

Challenges of COPD in Rural Nepal

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As life expectancy in Nepal improves and people are reaching older age, non-communicable diseases (NCDs) are becoming increasingly important health issues. Respiratory conditions, and in particular chronic obstructive pulmonary disease (COPD), are a major contributor to morbidity and mortality. The prevalence of COPD was estimated to be 4,810.3 /100,000 in 2016 and COPD was accountable for 5.72% of all deaths¹⁻³. Less is known about the prevalence of other respiratory diseases such as interstitial lung disease, bronchiectasis and lung cancer, but anecdotally these are also increasingly common. Here, we discuss that a “one-solution for all” approach will not reduce overall COPD risk in Nepal. Further, we discuss the challenges in delivering to rural areas interventions aimed at decreasing disease burden.

Nepal is a mountainous low income country in South East Asia, with a population of 29.6 million. The terrain and risk of natural disasters such as the 2015 earthquake means that infrastructure including healthcare services is less resilient than in higher income countries. For COPD, management strategies need to encompass prevention, smoking cessation interventions, case ascertainment, and management of symptoms in those with disease. Generally, smoking is common in Nepal across all regions, particularly in men⁴. A COPD diagnosis should be confirmed by spirometry⁵ but whilst purchasing a spirometer is one (not insignificant) cost, the cost of community based spirometry screening needs also to include maintenance of the machine, calibration of equipment and training of healthcare workers to conduct and interpret the findings. Managing acute exacerbations is key, often requiring hospitalisation but presentation is often late with one report suggesting that over half of the patients presenting to hospital with COPD already had cor pulmonale on echocardiography⁶.

A major challenge in delivering a COPD management strategy, however, is having approaches which are effective both in urban and in remote rural areas. The issues influencing strategy development vary depending on the setting. In Kathmandu and the nearby Kathmandu valley the main focus of concern other than tobacco smoking has been air pollution from traffic, urbanisation and industry⁷. The population of Kathmandu increased in the 10 years to 2011 by 61%⁸ and high population density contributes to poor air quality. Importantly, though, over 80% of the population in Nepal live in rural areas. With picture postcard Himalayan views, it is easy to be drawn into a false sense of security that environmental factors and COPD may not be big issues in rural Nepal. Although there are estimates of prevalence of lung disease within Nepal from initiatives such as the Global Burden of disease study¹⁻³, these are based on limited data. Very few studies have undertaken population based spirometry in rural areas in Nepal, and we believe that the burden from COPD is therefore underestimated.

Rural living brings geographical, fuel source, poverty, literacy and other lifestyle hurdles to overcome when living with and managing COPD. Further, the mountainous terrain and remoteness of communities means health facilities are often less accessible than in urban areas and this increases the physical challenge to those who are breathless from lung disease⁴. In addition, little is known about the consequences of other environmental exposures on risk of lung disease in rural communities in Nepal.

Whilst smoking and outdoor pollution are the main risk factors in urban areas, household air pollution (HAP) is also a major consideration, particularly in rural areas. Solid fuels are used widely across Nepal for cooking and heating but over 87% of households use them in rural areas compared to 52% in urban areas⁴. Direct exposures to HAP, particularly in women and young children during periods of prolonged cooking with very limited ventilation are considerable, and probably explains why despite different rates of smoking amongst men and women, overall prevalence of COPD is similar across sexes⁹. Although there are some endeavours to implement cleaner cooking using either gas or electric stoves, implementation remains slow, partly because of cost, acceptability and also because of the remoteness of many rural villages.

Poverty is also more evident in rural areas, with over half of rural households falling into the bottom 2 quintiles of wealth compared to 30% of households in urban regions⁴. This has obvious implications for health, including reduced ability to purchase and access maintenance and preventative therapies for NCDs. Furthermore, literacy rates are lower in rural areas (59%) compared to 75% in urban areas. One study found that in patients presenting with a COPD exacerbation to a rural tertiary care hospital, literacy levels were less than 20%¹⁰. This presents a large challenge to healthcare teams developing approaches to increase awareness, introduce preventative measures or to promote self-management interventions. This is particularly so when little is known about local perceptions and practises in relation to lung disease in this ethnically diverse country with a plurality of healing traditions¹¹.

Encouragingly, Nepal is rising to address this challenge. There are an increasing number of initiatives to try and prevent disease onset by addressing health education needs within schools and communities. The government and overseas organisations implementation of improved cooking stoves and the use of alternative fuel sources is

gathering pace. Paradoxically, despite low literacy rates, >90% of households in Nepal have a mobile phone, and public health interventions to reduce NCDs are being developed, taking advantage of these digital technologies⁴.

Whilst the solutions may have a different focus for urban compared to rural areas, rising to the challenges of improving management of the increasingly prevalent chronic lung disease in Nepal is now a high priority.

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