Nepal’s burden of non-communicable disease falls on municipalities with more women: a cross-sectional, ecological analysis of disease outcomes and social determinants of health
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Background:

While Nepal faces a high burden of both infectious and non-communicable disease, women experience further burdens from unequal exposure to poverty, access to education and lower employment. Examining social determinants of health helps to identify health disparity influences and direct policy decisions to improve health. We evaluated the association of gender with disease burden in Nepal.

Methods:

This is a retrospective, ecological, cross-sectional analysis of infectious and non-communicable disease outcome data (2017 to 2019) and data on social determinants of health (2011 to 2013) for 753 municipalities in Nepal. Multinomial logistic regression was conducted to evaluate the associations between social determinants and disease burden.

Results:

Municipalities with a higher proportion of women were associated with a higher burden of non-communicable disease (adj OR 1.69E8 [95%CI 3227.74 - 8.82E12]), driven by the prevalence of Chronic Obstructive Pulmonary Disease, hypertension and liver cirrhosis. These municipalities were not associated with an overall high burden of infectious disease (adj OR 0.031 [95%CI 0.00002 - 58.70] compared to the ‘low burden’ category on adjusted analysis, but were significantly associated with higher prevalence of pneumonia (adj OR 8.43E8 [95%CI 4.80E5 - 1.48E12]).

Municipalities with a higher proportion of women were also associated with having higher proportions of the population over 65 (r= .410, p<.001), unemployed (r= .247, p<.001), and indigenous population (r= .346, p<.001). The proportions experiencing malnutrition (r= -.265, p<.001) and having no access to piped water (r= -.437, p<.001) and a mobile phone (r= -.251, p<.001) in a municipality were interestingly inversely correlated to higher proportions of women. The higher proportion of women was strongly correlated to the absentee proportion in the municipality (r= .824, p<.001), indicating that out-migration of males is relevant in these municipalities.

Conclusions:

As an ecological-level study, these findings cannot be interpreted for individual risk, but indicate that in areas which have a higher female population, communicable disease prevalence is higher, particularly of hypertension, COPD and liver cirrhosis. This makes the prioritisation of women’s health vital to addressing the growing burden of non-communicable disease in Nepal.