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Disability-Adjusted Life Years due to Asbestos-Related Diseases in Italy, 2010–2020

Guaita Arianna[1], Romano Carolina[2], Minelli Giada[1], Binazzi Alessandra[3], Marinaccio Alessandro[3], Mensi Carolina[4], Zona Amerigo[2], Fazzo Lucia[2]

(1) Servizio tecnico-scientifico di statistica, Istituto Superiore di Sanità, Roma
(2) Dipartimento Ambiente e Salute, Istituto Superiore di Sanità, Roma
(3) Dipartimento di medicina, epidemiologia, igiene del lavoro e ambientale, INAIL, Roma
(4) SC Medicina del Lavoro, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano

CORRESPONDING AUTHOR: *Guaita Arianna, arianna.guaita@guest.iss.it*

INTRODUCTION

Estimates of Disability-Adjusted Life Years (DALYs) are a key tool for quantifying the global burden of diseases and risk factors, and are essential for health policy planning [1]. Asbestos is a certain carcinogen, known to cause mesothelioma (M), as well as cancers of the lung, ovary, and larynx, in addition to asbestosis and pleural thickening. In 2019, globally, 4,189,000 DALYs were attributed to diseases resulting from occupational exposure to asbestos. In Italy, 16,993 deaths due to M were recorded between 2010 and 2020, while the National Mesothelioma Registry (ReNaM) reported over 35,000 incident cases between 1993 and 2021.

OBJECTIVES

To estimate the DALYs attributable to asbestosis and mesothelioma—diseases with a high etiologic fraction linked to asbestos exposure (80% and 100%, respectively)—in Italy over the decade 2010– 2020.

METHODS

The analysis considered deaths from M and asbestosis, hospital admissions for asbestosis, and incident cases of M. DALYs were calculated as the sum of Potential Years of Life Lost due to premature death (PYLLs) and Years Lived with Disability (YLDs). Data on deaths from M (ICD-10: C45) and asbestosis (ICD-10: J61), as well as hospitalizations for asbestosis (ICD-9-CM 501), were obtained from databases curated by the Istituto Superiore di Sanità (ISS), using sources from ISTAT and the Ministry of Health. Incident M cases were estimated from ReNaM data. All information was stratified by sex, age group, and calendar year. PYLLs were calculated both in absolute terms and as age-standardized rates (per 100,000 population) at national and regional levels, using ISTAT life expectancy data disaggregated by sex, age, and year. YLDs were estimated at the national level, based on hospitalizations for asbestosis and incident M cases, using a disability weight of 0.217 and a duration of 20–30 years for asbestosis, and a weight of 0.540 with a one-year duration for M [2, 3].

RESULTS

Between 2010 and 2020, an estimated 204,232 DALYs were attributable to asbestos-related diseases among men and 72,625 among women in Italy, assuming a 30-year duration for asbestosis. PYLLs accounted for 161,300 in males (96.7% due to M) and 67,311 in females (99.1% due to M). Northern regions—particularly Liguria, Piedmont, and Friuli-Venezia Giulia—showed the highest PYLL rates from M in both sexes. YLDs amounted to 7,075 for M and 35,857 for asbestosis in men, and 2,710 for M and 2,604 for asbestosis in women.

CONCLUSIONS

This is the first estimate of the total burden of mesothelioma and asbestosis in Italy expressed in terms of DALYs. These data, which include years lived with reduced functioning, provide significant support for healthcare planning and the implementation of appropriate welfare measures.

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REFERENCES

1. WHO. Methods and data sources for global burden of disease estimates 2000-2019. Annex table 4. Geneva, December 2020. Available at https://cdn.who.int/media/docs/default-source/gho-documents/global-health-estimates/ghe2019_daly-methods.pdf
2. Global Burden of Disease Study 2021 (GBD 2021) Disability Weights. https://ghdx.healthdata.org/record/ihme-data/gbd-2021-disability-weights (registration required).
3. Diandini R, Takahashi K, Park EK et al. Potential years of life lost (PYLL) caused by asbestos-related diseases in the world. American Journal of Industrial Medicine. 2013. 56(9):993-1000.

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