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EDITORIAL

Health Disparities in Asthma: it's not complicated, but it's complex

Brittany Duchene[1], MD

[1]Assistant Professor, Larner College of Medicine, University of Vermont, Burlington, VT

brittany.duchene@uvm.edu

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ABSTRACT

Health disparities are complex and are not selective with regard to disease. They refer to any health outcome that is tied to a race, gender, religion, sexual identity, disability, age, socioeconomic status, or geographic location. Health disparities have been documented in different types of cancer, obesity related disease, cardiac disease and lung disease. Elimination of health inequalities for minority groups would reduce total costs by $1.5 trillion over a 3 year period[1] . Despite the recognition of these disparities and the cost associated with their existence, they continue to be prevalent in many disease processes. The aim of this article is to provide a brief overview of asthma as a health disparity and the complexities at play which create these disparities.

Asthma as a health disparity

Health disparities in asthma are well described. Racial and ethnic minorities are disproportionately affected by asthma: Black Americans have a 10.6% prevalence of asthma as compared to White Americans with a 7.7% prevalence of asthma[2]. Compared to White people, Black and Hispanic people have higher rates of ER visits and hospital visits for asthma in addition to more daytime asthma symptoms, nocturnal asthma symptoms and higher rates of activity limitation due to asthma[3]. Asthma mortality rates are 8 fold higher in Black children and 3 fold higher in Black adults when compared to White children and adults, respectively[4]. The factors contributing to health disparities in asthma are complicated and will be touched on in this article.

The cause of health disparities are complex and a result of historical policies, such as red-line zoning laws which have changed the landscape of various communities within the United States. Local zoning laws in the early 20th century were developed to enforce racial segregation. In 1933, the Home Owners' Loan Corporation (HOLC) was initiated to expand home ownership and prevent foreclosure by providing mortgages. There were 4 color coded strata that were developed based on the race and ethnicity of residents. Category "D" areas were outlined in red and considered "hazardous" due to the large proportion of Black and immigrant residents[5]. No mortgage loans were made available in these red-lined areas. Urban renewal projects also have a significant contribution to the development of health disparities. Urban renewal projects were loans and grants given to urban areas for the purpose of acquiring and clearing out so-called "blighted" areas resulting in the subsequent displacement of Black residents in order to redevelop the area into middle income housing, hospitals, universities and civic centers. Red-lining and urban renewal projects are core policies that directly impacted both the geographic location and health of minority Americans.

Due to racist policy making, minority Americans were displaced from their homes and unable to obtain mortgages. Although these policies were put into place over 100 years ago, the ripple effects persist. In red-lined HOLC areas, there are higher levels of airborne carcinogens and respiratory hazards combined with fewer parks, trees and other green spaces, elevated poverty rates, mortgage lending biases, economic inequity and even segregation[5]. Higher levels of particulate matter and pollution worsen asthma outcomes and are correlated with higher rates of asthma[6]. In dense urban settings, minority groups are also subject to increased degrees of violence resulting in increase psychosocial stress, which has been linked to increase asthma morbidity[7]. Historic displacement of minority groups within the United States resulted in continued neighborhood factors that both increase the incidence of asthma and worsen asthma outcomes.

A direct effect of these historic policies has resulted in a lower socio-economic status (SES) of those cultural groups afflicted by such policies. The red-lined communities have a higher percentage of current day poverty rates[8]. There is a 2-fold increased risk of asthma by age 14 among children living in a low-income family[9]. There is also a protective effect against asthma among children whose families moved out of poverty: there is a 60% lower risk of developing asthma when low income families saw increasing incomes[9]. SES has clear effects on outcomes of those with asthma.

The affordability and access to healthcare is another large influence of health care disparities in asthma. Black and Latino population groups are less health insured than White populations[1]. The consequences of this are many and severe; there are fewer preventative services, poorer health outcomes, higher mortality and disability rates, lower earning (due to sickness and disease) and more advanced stages of illness. This results in a high financial burden to the healthcare system as a whole.

Conclusions

It is undeniable that health disparities exist in asthma. The historical events that have resulted in changing neighborhood factors such as less green space, higher pollution rates, and higher poverty rates are not complicated to understand. The multiple factors at play with worsening asthma outcomes due to health disparities are, however,

complex. The historical policies put in place have caused generational health disparities which worsen patient outcomes and increase healthcare costs significantly. There are efficacious medical interventions to treat asthma, however without changing the environmental toll these communities still face and improving access to affordable care, a health disparity will continue to exist for asthma.

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References:

1. Riley WJ. Health disparities: gaps in access, quality and affordability of medical care. Trans Am Clin Climatol Assoc. 2012;123:167-72; discussion 72-4. Epub 2013/01/11. PubMed PMID: 23303983; PMCID: PMC3540621.

2. Grant T, Croce E, Matsui EC. Asthma and the social determinants of health. Ann Allergy Asthma Immunol. 2022;128(1):5-11. Epub 2021/10/22. doi: 10.1016/j.anai.2021.10.002. PubMed PMID: 34673220; PMCID: PMC8671352.

3. Cremer NM, Baptist AP. Race and Asthma Outcomes in Older Adults: Results from the National Asthma Survey. J Allergy Clin Immunol Pract. 2020;8(4):1294-301.e7. Epub 2020/02/10. doi: 10.1016/j.jaip.2019.12.014. PubMed PMID: 32035849.

4. Forno E, Celedon JC. Health disparities in asthma. Am J Respir Crit Care Med. 2012; 185(10):1033-5. Epub 2012/05/17. doi: 10.1164/rccm.201202-0350ED. PubMed PMID: 22589306; PMCID: PMC3359893.

5. Namin S, Xu W, Zhou Y, Beyer K. The legacy of the Home Owners' Loan Corporation and the political ecology of urban trees and air pollution in the United States. Soc Sci Med. 2020;246:112758. Epub 2019/12/31. doi: 10.1016/j.socscimed.2019.112758. PubMed PMID: 31884239.

6. Guarnieri M, Balmes JR. Outdoor air pollution and asthma. Lancet. 2014;383(9928):1581-92. Epub 2014/05/06. doi: 10.1016/s0140-6736(14)60617-6. PubMed PMID: 24792855; PMCID: PMC4465283.

7. Kozyrskyj AL, Mai XM, McGrath P, Hayglass KT, Becker AB, Macneil B. Continued exposure to maternal distress in early life is associated with an increased risk of childhood asthma. Am J Respir Crit Care Med. 2008;177(2):142-7. Epub 2007/10/13. doi: 10.1164/rccm.200703-381OC. PubMed PMID: 17932381.

8. Nardone AL, Casey JA, Rudolph KE, Karasek D, Mujahid M, Morello-Frosch R. Associations between historical redlining and birth outcomes from 2006 through 2015 in California. PLoS One. 2020;15(8):e0237241. Epub 2020/08/09. doi: 10.1371/journal.pone.0237241. PubMed PMID: 32764800; PMCID: PMC7413562.

9. Kozyrskyj AL, Kendall GE, Jacoby P, Sly PD, Zubrick SR. Association between socioeconomic status and the development of asthma: analyses of income trajectories. Am J Public Health. 2010; 100(3):540-6. Epub 2009/08/22. doi: 10.2105/AJPH.2008.150771. PubMed PMID: 19696386; PMCID: PMC2820073.

