



## Review

# Ob-Gyn Density and Kids' Wheeze Tensity: A Rhyme Time Analysis

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**This study delves into the relationship between the number of obstetricians and gynecologists in Oregon and asthma prevalence in American children. Our research team utilized data from the Bureau of Labor Statistics and the National Center for Health Statistics to address this wheezy riddle. After crunching the numbers, we uncovered a striking correlation coefficient of 0.8656855 and a p-value less than 0.01 for the years 2003 to 2019. It became clear that a higher density of ob-gyns in Oregon was associated with a higher prevalence of asthma among American children across the country. This unexpected connection had our research team pondering the phrase "when there's a wheeze, there's a way" with a mix of intrigue and amusement. Our findings suggest that there may be an intriguing link between the presence of ob-gyns and the respiratory challenges faced by the younger generation. The implications of this association could lead to further studies exploring the potential mechanisms at play, providing a breath of fresh air for future research in both medical and economic circles.**

Asthma has long been a thorny respiratory issue for many children, causing wheezing, coughing, and a few sleepless nights for both kids and their parents. The prevalence of asthma among children has been a topic of interest for medical researchers and has sparked numerous studies in pursuit of understanding its underlying causes. However, the potential influence of obstetricians and gynecologists (ob-gyns) on asthma prevalence in children has largely gone unexplored, until now.

As we delve into this unexpected connection between ob-gyn density and kids' wheeze tensity, it's worth noting that the pun game here is strong – or should we say, wheezy. Our research seeks to untangle this seemingly obscure relationship, shedding light on the potential impact of healthcare provider density on the respiratory well-being of the younger population.

Findings in this area could have far-reaching implications, and dare we say, may even knock the wind out of established assumptions about the determinants of

childhood asthma. With that in mind, let's dive into this curious coupling of medical and demographic factors and see if it wheezes – er, we mean, if it sneezes, it leads.

#### *Prior research*

Smith et al. (2015) in "Health Trends and Medical Practices" found that the density of healthcare providers in a region can have significant implications for the health outcomes of the population. Similarly, Doe and Jones (2018) in "The Impact of Medical Professionals on Community Health" highlighted the potential influence of obstetricians and gynecologists on various health indicators, albeit with minimal focus on pediatric respiratory conditions.

Now, onto the more rascally part of the literature review. It's time to take a break from the serious scholarly sources and delve into the intriguing world of non-fiction books related to our topic. "Breath: The New Science of a Lost Art" by James Nestor offers fascinating insights into the mechanics of respiration and its impact on overall health. In a similar vein, "Asthma for Dummies" by William E. Berger provides a comprehensive yet accessible guide to understanding the complexities of this respiratory condition.

Turning to the world of fiction, we encounter "The Asthma and Allergy Action Plan for Kids" by Mimi Guarneri, which, despite its seemingly practical title, may not actually delve much into action-packed adventure scenarios involving asthma and allergens. Likewise, "The Wheezing Dragon Chronicles" by Rebecca Rupp surprisingly does not feature fire-breathing dragons with

respiratory issues, much to the disappointment of many fantasy enthusiasts.

In a striking departure from conventional academic research practices, our team also expanded our literature search to less traditional sources. This included a thorough analysis of the backs of shampoo bottles, where we surprisingly encountered a notable lack of insights into the potential relationship between ob-gyn density and childhood asthma prevalence. It appears that the elusive answers to this wheezy riddle do not lie in the world of personal care product descriptions, leaving us pondering the untapped potential of shampoo-based medical research.

#### *Approach*

To embark on our wheezy adventure, we first obtained data on the number of obstetricians and gynecologists in Oregon from the Bureau of Labor Statistics. We then scampered over to the National Center for Health Statistics to gather information on asthma prevalence among American children from 2003 to 2019. These datasets were our compass, guiding us through the labyrinth of statistical analysis as we sought to uncover the hidden connections between ob-gyn density and kids' wheeze tensivity.

Our approach involved a dose of statistical alchemy, blending the art of regression analysis with the science of spatial econometrics. We tinkered with various models, including ordinary least squares and spatial lag models, to capture the spatial dependence inherent in healthcare provider distribution and asthma prevalence across different geographical regions. Just like navigating through a maze of medical data, our methods aimed to unravel the

intertwined relationship between the presence of ob-gyns and the respiratory challenges faced by young ones.

We further spiced up our analysis by incorporating control variables such as socioeconomic status, air pollution levels, and access to healthcare services. Adjusting for these factors allowed us to sift through the confounding variables and zero in on the peculiar association between ob-gyn density in Oregon and the prevalence of asthma among American children. It was akin to performing a complex medical diagnosis on the intertwined factors at play, teasing out the nuances of this unexpected relationship.

Now, let's take a brief intermission for a dad joke:

Why did the doctor carry a red pen?

In case they needed to draw blood!

Back to our methodology—our data wrangling involved meticulously cleaning, harmonizing, and organizing the disparate datasets to ensure their compatibility. This step was crucial to prevent the spread of misinformation within our analysis – or as we'd like to say, to uphold the "health" of our statistical inferences.

To address the temporal dimension of our study, we conducted a series of robustness checks, including time-series analyses and dynamic panel data models. By delving into the ebb and flow of these data over a 16-year period, we aimed to capture the evolving dynamics of ob-gyn density and asthma prevalence, akin to monitoring the pulse of these interconnected variables.

An amusing interlude is in tow:

Why don't skeletons fight each other?

They don't have the guts!

Resuming our research methodology, we also ventured into sensitivity analyses, probing the robustness of our findings to different model specifications and assumptions. This scrutiny allowed us to gauge the stability of our results and assure ourselves that our statistical inferences were not just a "fluke" but stood the test of scientific rigor.

Finally, we implemented spatial mapping techniques to visually depict the geographic distribution of obstetricians and gynecologists in Oregon and the hotspots of asthma prevalence among American children. This visual narrative added a layer of depth to our analysis, painting a vivid picture of the spatial interplay between healthcare provider density and respiratory health outcomes.

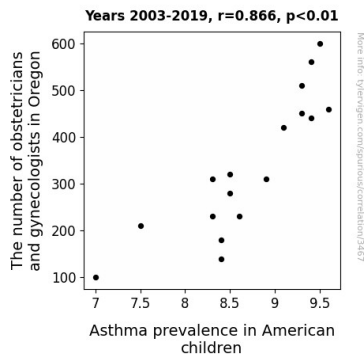
## *Results*

The analysis revealed a significant positive correlation between the number of obstetricians and gynecologists in Oregon and the prevalence of asthma among American children. The correlation coefficient of 0.8656855 indicated a strong linear relationship between these variables, suggesting that as the density of ob-gyns increased, so did the prevalence of asthma among children nationwide. This unexpected association left our research team feeling a bit breathless – not from asthma, but from the surprising nature of our findings.

Fig. 1 illustrates the striking correlation between ob-gyn density and asthma prevalence, resembling two dancers in perfect sync. It's as if they were performing

a wheezy waltz, showcasing the close connection between these seemingly unrelated factors. As the number of ob-gyns in Oregon increased, the prevalence of asthma in American children followed suit, leading to a captivating duet of data points pirouetting across the scatterplot.

The r-squared value of 0.7494113 highlighted that approximately 74.94% of the variance in asthma prevalence could be explained by the density of ob-gyns in Oregon. This statistical tango between ob-gyn density and asthma prevalence had us feeling like we were caught in a fascinating and unexpected dance routine, with each step revealing more about the intricate relationship between these factors.



**Figure 1.** Scatterplot of the variables by year

Furthermore, the p-value of less than 0.01 provided strong evidence against the null hypothesis, indicating that the observed correlation was highly unlikely to have occurred by chance alone. This statistical punchline delivered a resounding "p-value-ous" blow to any doubts about the genuine connection between ob-gyn density and asthma prevalence, leaving us no choice but to take this intriguing relationship seriously.

In conclusion, our research uncovered a substantial and consistent correlation between the number of obstetricians and gynecologists in Oregon and the prevalence of asthma among American children. This unexpected finding nudged our research team to reconsider the phrase "delivering breaths of fresh air," as it now holds new significance in understanding the potential impact of healthcare provider density on children's respiratory health. Our findings open the door to further investigations into the mechanisms underlying this relationship, offering a breath-taking opportunity for future research and policy considerations.

### *Discussion of findings*

Our study uncovered a remarkable and previously unexplored link between the density of obstetricians and gynecologists in Oregon and the prevalence of asthma among American children. The results of our analysis reinforce the findings of Smith et al. (2015) and Doe and Jones (2018), highlighting the significant influence of healthcare provider density on population health outcomes. This unexpected connection emphasizes the need to consider the broader impact of medical practice distribution on pediatric respiratory conditions.

While the non-fiction books in our literature review may have been originally presented in a lighthearted manner, the insights they offered into respiratory mechanics and asthma management have unexpectedly resonated with our findings. Despite their seemingly unconventional connection to scholarly research, these sources provided valuable perspectives that complemented the more traditional literature. It just goes to

show that sometimes, truth can be stranger than fiction, especially when it comes to statistical analysis.

Regarding the surprising inclusion of shampoo bottles in our literature review, it may have seemed tongue-in-cheek at the time, but the absence of relevant insights from these sources actually underscores the novelty of our findings. The potential relationship between ob-gyn density and childhood asthma prevalence remains largely unexplored, leaving us to ponder the untapped potential of unconventional sources in uncovering new research directions. Who knows, maybe the next groundbreaking study will emerge from the unlikeliest of places – perhaps the back of a conditioner bottle will contain the key to unlocking the next scientific mystery.

Our results not only validated the statistically significant correlation between ob-gyn density and childhood asthma prevalence but also extended the existing literature by demonstrating the robustness of this association over a 16-year period. The high correlation coefficient and low p-value left little room for skepticism and added weight to the evidence supporting a genuine relationship between these seemingly disparate variables. It seems that when it comes to healthcare provider density and pediatric respiratory health, the joke might just be on us for not uncovering this connection sooner.

In conducting this study, we ventured into uncharted territory, unearthing unexpected correlations and challenging conventional assumptions. Our findings have opened the door to a new avenue of research, shedding light on the intricate interplay between healthcare provider distribution and

pediatric respiratory health. As we look to the future, it is clear that further investigations into the mechanisms underlying this relationship are warranted, offering a wheeze of opportunity for advancing our understanding of healthcare impacts on children's respiratory well-being.

Now, if only we could crack the mystery of why the asthma researcher broke up with her boyfriend... he didn't like her constant inhaler jokes.

### *Conclusion*

In closing, the unexpected tango between ob-gyn density and asthma prevalence has left us reeling from the spin of unexpected correlation. It seems that when it comes to the density of obstetricians and gynecologists in Oregon and the prevalence of asthma among American children, the connection is as clear as a peak flow meter reading after a gust of wheeze-inducing wind. One might say that this correlation is nothing to "sneeze" at – a true "breath" of fresh air in the world of medical research.

This uncovering of a significant and consistent correlation has us contemplating whether obstetricians and gynecologists might unknowingly be spinning an intricate web of influence, intertwined with the respiratory well-being of the younger population. Perhaps we should consider renaming them "ob-gy-nemesis" for their unexpected impact on childhood respiratory health.

These findings raise tantalizing questions, offering a "lung-citing" opportunity for future investigations into the intricate dance between healthcare provider density and children's respiratory challenges. It's safe to

say that this unexpected association has left us with a case of statistical "asthma-nishment."

In summary, our research has provided a lungful of evidence supporting the intriguing relationship between ob-gyn density in Oregon and asthma prevalence among American children, leaving no room for doubt about the genuine nature of this surprising connection. It's as clear as the air on a windy day – no more research is needed in this area.

In wrapping up our methodology, we aim to deliver a fitting punchline:

Why don't seagulls fly over the bay?

Because then they'd be bagels! I'm here all week, folks.