

Report - Pfizer vs AstraZeneca

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Question

What side effects did people have after receiving the Pfizer and AstraZeneca covid vaccine over all ages?

Introduction

Through the conduction of a survey, this report has collected the experiences from 36 individuals with relation to the side effects felt after receiving the Pfizer or AstraZeneca covid vaccine over three different age groups.

The aim is to determine what side effects people had after receiving the Pfizer and AstraZeneca covid vaccine over all ages. This is important to observe as it will inform us on whether the type of Covid vaccine you choose to receive changes the probability of you experiencing vaccine side effects. This study will also aim to determine which age group will be most affected by the vaccines Pfizer and AstraZeneca and whether the results across each age group will differ or remain consistent.

Results/Analysis

12-30-Year-olds Pfizer vs AstraZeneca (Figure 1)

With the age group of 12-30, my findings revealed that when receiving AstraZeneca, it was likely that if you experienced fatigue, you also had a fever. This finding is comparable to Pfizer's, which revealed that those aged 12 to 30 were more likely to get a headache if they already had a fever. In addition, both immunizations had a 100% side effect of arm pain and a 0% rate of being nauseous.

Overall, my results found that if you had the Pfizer vaccine, you were 10% more likely to have greater side effects than if you received the AstraZeneca vaccine in this age range. AstraZeneca has a 43.33% rate of side effects, while Pfizer has a 53.33% rate, according to my findings.

31-50-Year-olds Pfizer vs AstraZeneca (Figure 2)

According to my research, the vaccine side effect difference was 10% with Pfizer having a 40% side effect rate and AstraZeneca having a 50% side effect rate. The mode for this age range data was arm pain for both Pfizer and AstraZeneca vaccines.

51-80-Year-olds Pfizer vs AstraZeneca (Figure 3)

Similarly to the previous age group, Pfizer has a 40% side effect rate and AstraZeneca has a 50% rate. In both vaccines, the mode was arm pain with a 100% rate of occurring.

Overall Analysis

Overall my research found that across all age groups the mode consistently remained as arm pain, with all individuals surveyed claiming to experience some form of arm discomfort after receiving either vaccine. Interestingly, my findings also revealed that there was a consistent 10% difference in the number of side effects experienced between the two vaccines in each age range. Overall for both vaccines across all age groups, there was a 100% rate of arm pain, 38.89% rate of fatigue, 33.33% rate of fever, 36.11% rate of a headache and lastly a 16.67% rate of experiencing nausea.

Collaboration

After reviewing the work from Amelia Rendina, her findings revealed that there are currently 5,898,147 people over 12 who have been double vaccinated. This information used collaboratively with my findings suggests that it is likely that close to 100% of these people would have experienced arm pain, 38.89% of people (2,293,789) experienced fatigue, 33.33% (1,965,852) experienced a fever, 36.11% (2,129,821) experienced a headache and 16.67% (983,221) of people experienced feelings of nausea.

Although this is what my results suggest, this would not be the best and most accurate way of determining what side effects people most likely experienced, as my research would have to be conducted on a much larger scale in order to be accurate.

Further questions raised out of my research with ways of performing these investigations

Does gender affect which side effects you experience?

A similar study can be conducted by comparing the results by asking for their gender rather than age.

Does the 1st or 2nd dose of either vaccine have more side effects?

Ask in the survey what side effects you had on the 1st dose and then what side effects you had on the 2nd dose

Would the results still be the same if I tested other side effects such as dizziness, muscle pain etc. Would AstraZeneca still be the vaccine with more side effects?

Instead, I would ask participants if they experienced other side effects and then compare them for both vaccines.

Which vaccine had the most severe side effects?

Ask in the survey to rate the severity of each side effect they experienced on a scale between 1 and 10.

Conclusion

As a result of my findings, it can be concluded that AstraZeneca vaccine recipients are more likely to experience side effects than Pfizer vaccine recipients, as two of the three age groups experienced a higher rate of side effects after receiving the AstraZeneca vaccine. The age group 12-30 were most affected by the Pfizer vaccine whereas the age groups 31-50 and 51-80 were most affected by the AstraZeneca vaccine.

Figure 1

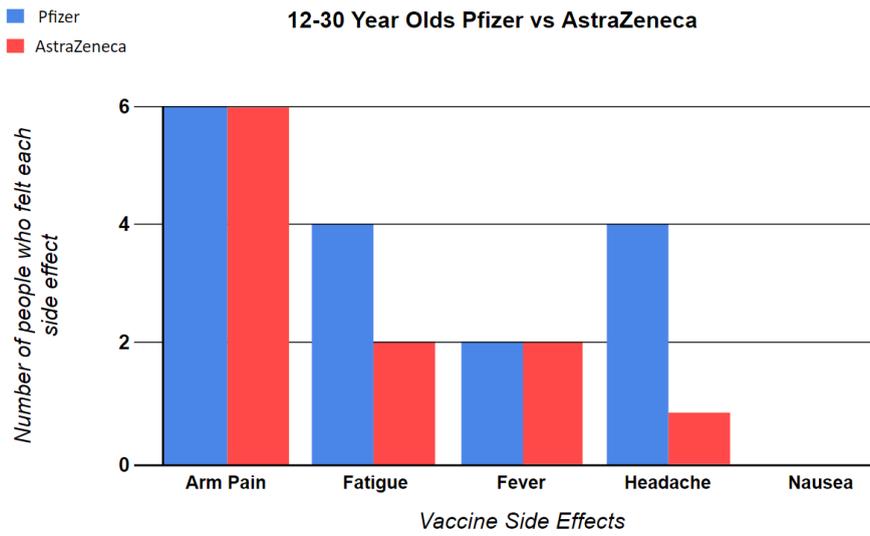


Figure 2

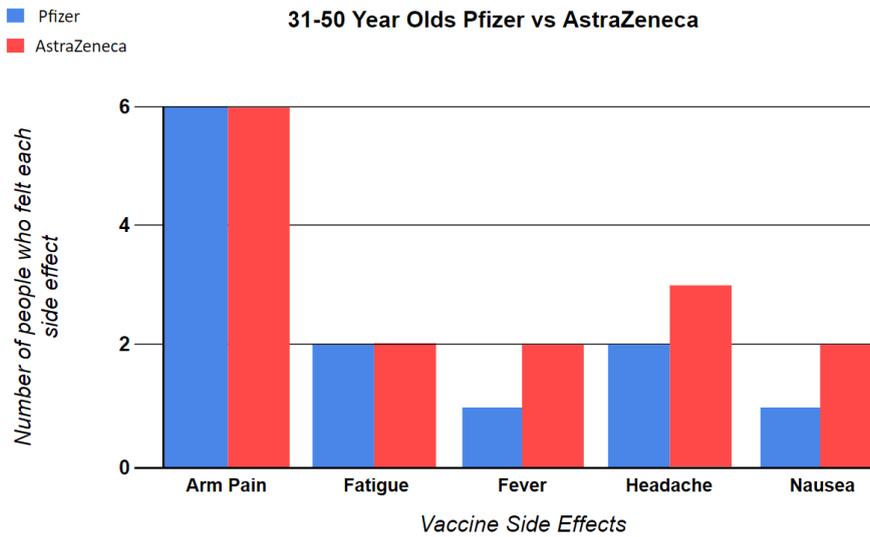
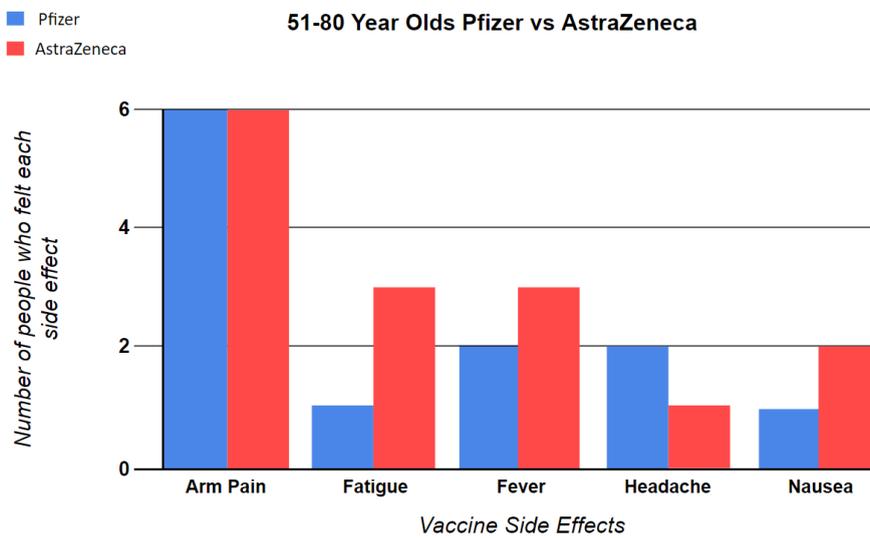


Figure 3



Appendices - Data

Pfizer - 12-30-Year-olds

23 Daniel - arm pain, fatigue

20 James - arm pain

18 Sam - arm pain, fatigue, fever, headache

15 Katherine - arm pain, fatigue, headache

15 Olivia - arm pain, headache, dizziness

14 Emily- arm pain, fatigue, fever, headache

Pfizer - 31-50-Year-olds

50 Zach - arm pain, dizziness, muscle aches

50 Don - arm pain, muscle pain, nausea

48 Helen - arm pain, fatigue, fever, headache

47 John - arm pain, fatigue, headache

47 Julia - arm pain, dizziness

42 Madison - arm pain

Pfizer - 51-80-Year-olds

70 Zoe - arm pain, fatigue, joint pain

67 Luke - arm pain, fever

66 Kathy - arm pain, headache, nausea

60 Mary - arm pain, fever, nausea

53 Michael - arm pain, headache, joint pain

51 Roger - arm pain

AstraZeneca 12-30-Year-olds

27 Logan - arm pain, muscle pain, nausea

26 Danica - Arm pain, fever, cramps, nausea, headache, muscle pain, dizziness, fatigue

25 Ben - arm pain

21 Mark - arm pain, fatigue, muscle pain

21 Zac - arm pain, fever, flu-like symptoms

20 Adam - arm pain, muscle pain

AstraZeneca 31-50-Year-olds

50 Robert - arm pain, headache, fatigue

48 Spiro - arm pain, headache

48 Maria - arm pain, fatigue, fever

47 George - arm pain, fever, muscle pain, nausea

47 Josh - arm pain, headache

40 Alex- arm pain, flu-like symptoms, nausea

AstraZeneca 51-80-Year-olds

80 Ryan - arm pain, muscle pain, joint pain

76 Jim - arm pain, fatigue, muscle pain

60 Penelope - arm pain, fever, headache, nausea

55 Joe - arm pain, fever

55 Lucy - arm pain, fatigue

54 Jill - arm pain, fatigue, fever, nausea