

**BIOSTATISTICS AND EPIDEMIOLOGY**

**PHAR222**

**Home Work 2**

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1. During a period of 5 years 100 new cases of obstructive lung disease were diagnosed among 1100 children 2 months of age at start of follow-up. The mean level of air pollution during the period was measured. The cases and the children with no lung disease showed the following distribution according to air pollution at their place of residence.

|  |  | Cases | Non-cases | Total |
| --- | --- | --- | --- | --- |
| Pollution | Low  Medium  High | 50  20  30 | 700  150  150 | 750  170  180 |

1. Please calculate the **relative risk** for obstructive lung disease for those exposed to **medium** and then to **high** level of pollution using those exposed to **low level** of air pollution as the **reference category**.

**Solution:-**

Relative Risk (RR) = Exposed Risk

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Non-exposed Risk

RR for **Medium level** = 20/ (20+150)

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50/ (50+700)

= **1.76** ( > 1 Risk increased )

RR for **High level** = 30/ (30+150)

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50/ (50+700)

= **2.5** ( > 1 Risk increased )

1. What are your conclusions from this result ?

I conclude that when the pollution is high the relative risk is higher the pollution of the medium level, and the difference in the total number of people is 10 (in medium and high level).

1. Case-control study- pancreatic cancer and coffee drinking

pancreatic cancer

cases controls

| 28 | 280 |
| --- | --- |
| 140 | 2600 |

1. 2880

Please calculate the odds ratio(OR) what do you conclude?

**Solution:-**

Odds Ration (OR) = Odds among cases

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Odds among controls

28 \* 2600

= ـــــــــــــــــــــــــــــــ

140 \* 280

= **1.86**