

Cohort and Case-Control Studies

Evidence-Based Practice in Speech-Language Therapy (SHSC 2033)

Session 5 Exercise

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Medical experts refute singers' claims of flu vaccine risks

"Cantopop singers have recently made warnings against flu vaccines. In a leaked WhatsApp audio recording, Ms Kay Tse On-kei said flu vaccines contained mutated bacteria and mercury. [Her] claims were rejected by HKU microbiologist Professor Yuen Kwok-Yung. Dr Ho Pak Leung, Director of the HKU Centre for Infection, . . . emphasized that medical issues should be separated from entertainment. HKU Dean of Medicine Professor Gabriel Leung said these comments made by well-known figures had no support from the scientific and medical fields.

HKU released findings of a study on the effectiveness of the vaccine type for the current flu season. It found that the flu jabs were 66% effective. The study looked into the data of 1,078 children who were admitted to hospitals between December 4 last year and January 31 this year. All the children suffered from fever and acute respiratory illness. Among the 339 confirmed with flu, only 22 had been vaccinated. Of the remaining 739 children who were unaffected by the virus, 103 had received seasonal flu vaccinations. (Major local papers)"

¹ HKU Daily Media Highlights, 2018-02-11

Case-control study ²

	Vaccinated	Not vaccinated	Total
Flu virus	22	317	339
No flu	103	636	739

$$OR = \frac{(22/317)}{(103/636)} = 0.43$$

$$95\% \text{ CI} = [0.27, 0.69]; \chi^2 = 12.57, p < .001$$

$ORs < 1$ suggests that exposure (flu vaccine) reduces outcome (risk of flu).

²Statistics calculated using epiR package of R (Stevenson, 2017).

Threats to external validity?

- Retrospective study
- Was determination of who received flu vaccine based on medical records or self-report?
- Data based on hospitalisations only (those with severe symptoms?) so odds ratio may not reflect wider population.
- People who didn't get ill (who received and didn't receive the vaccine) weren't included.
- Press release indicates study participants were children, so results cannot be generalised to adults.

References

Stevenson, M. (2017). *epiR: tools for the analysis of epidemiological data (R package version 0.9-93)*. Retrieved from <https://cran.r-project.org/package=epiR>