

5<sup>th</sup> International Conference on

# Biometrics & Biostatistics

October 20-21, 2016 Houston, USA

## Binary correlation coefficient and measures of risk

Jake Olivier

University of New South Wales, Australia

The binary correlation coefficient  $\phi$  is a natural extension of Pearson's correlation coefficient for the  $2 \times 2$  table. However,  $\phi$  is not often used as a measure of association due to constraints on the marginal probabilities that also constrain the possible values of  $\phi$ . The motivation for constructing  $\phi$  is scaling the covariance for two binary random variables to the interval  $[-1,1]$  using the Cauchy-Schwarz inequality. However, it can be shown that  $\phi$  is usually bounded by a narrower interval and there exists a better inequality for the covariance of two binary random variables. It will be demonstrated that an improved correlation coefficient can be constructed using this inequality. Additionally, it will be demonstrated that the binary correlation can be transformed to epidemiological measures such as the relative risk, odds ratio and hazard ratio when knowledge of the marginal distributions are known.

j.olivier@unsw.edu.au

## Assessment of basic & advance knowledge of biostatistics and clinical research among medical practitioners at KFMC

Muhammad Bashir, Wani Tariq and Munshi Humariya

King Fahad Medical City, Saudi Arabia

**Background:** Physicians, particularly those with no formal education in epidemiology and biostatistics, had a poor understanding of common statistical tests and limited ability to interpret study results. Fundamental concept of biostatistics and epidemiology are awful for physicians. If physician do not understand fully the primary concept of biostatistics and epidemiology, then conclusions reach will be more likely to be wrong.

**Objective:** Aim of this study is to evaluate the low level knowledge and awareness of basic & advanced biostatistics and epidemiology among physician, resident, clinician and researcher at King Fahad Medical City.

**Methodology & Design:** The cross sectional descriptive study design was used. The survey was completed among 250 participants in this study. Target sample was enumerated of all physicians, clinicians, resident, researcher and intern both male and female from different department who were practicing and worked in their OPD, emergency, clinics and other faculties.

**Result:** The initial pilot survey was completed in only 250 participants from eight departments and three faculties. The overall mean percentage corrected answer score based on statistical knowledge and biostatistics of results was 31.8% [95% C.I, 28.6%-38.2%] in contrast 65.6% [95% C.I, 58.3%-72.1%] for research fellows and general medicine faculty with research training which is highly statistically significant at  $P < 0.001$ . High scores in resident were associated with additional advanced degrees 48.3% [95% C.I, 45.6-55.8%] in comparison with 42.5% [95% C.I, 38.3%-44.6%] at  $P < 0.001$ .

**Conclusion:** A large number of medical practitioners had low level knowledge and concept of biostatistics and unable to interpret basic and advanced statistical concept that commonly found in the medical literature. Formalize teaching system of biostatistics and epidemiology will be required during the residency for better understanding and proficient in statistical information.

mbashir@kfmc.med.sa