

THESIS TITLE :INAPPROPRIATE STATISTICAL REPORTING IN MEDICAL
AND HEALTH RESEARCH ARTICLES

AUTHOR :MRS. TANOMSRI KUMTHONGDEE

THESIS ADVISORY COMMITTEE :

A. Chirawa Thun

.....Chairman

(Associate Professor Aroon Chirawatkul)

Thany B

.....Member

(Assistant Professor Bandit Thinkhamrop)

Abstract

Objective: This study aims to assess the proportions of inappropriate statistical reporting in medical and health research articles.

Design: A descriptive study.

Sample: All articles published in Journal of the Medical Association of Thailand during January 1997 to January 1998 were reviewed. Those involved review articles or without statistical reporting were excluded. A total of 100 articles were examined.

Main outcome Measure(s): Criteria for assessing inappropriate statistical reporting include: 1) inappropriate descriptive statistics for study sample, for example, use of the mean and standard deviation (SD.) for highly skew data, use of the standard error (SE.) instead of the SD. to summarize data and inappropriate use of percentage, 2) error in calculation for example, inappropriate denominator, use of SD. to calculated confidence intervals, and risk assessment which were significance whereas the confidence intervals of Relative Risk or Odds Ratios include 1, 3) inappropriate descriptive statistics for characterizing study sample, 4) inappropriate statistics for answering research questions, and 5) inappropriate presentation. An article was classified as inappropriate if at least one item found to be inappropriate. Inappropriate use by items were also presented.

Results: Among a total of 100 articles, 78 were found to have at least one item of inappropriate statistical reporting (95% CI= 68.6% to 85.7%). There were 48 articles in which their descriptive statistics for study samples were inappropriate, 48% (95%CI= 37.9% to 58.2%). Error in calculation of statistics was not found. Statistical methods were described in 69 articles, 17.4% of

them were found inappropriate (95% CI= 9.3% to 28.4%). Among a total of 69 articles where there were statistical methods uses for answering their main research question, 57 articles can be assessed, 22 articles were inappropriate (38.6%, 95% CI= 26.0% to 52.4%). Inappropriate presentation were found in 39 articles (95% CI= 29.4% to 49.3%).

Conclusion: There was a high proportion of inappropriate statistical reporting of articles published in Thai medical and health journal which considered to be the highest standard one. This suggested that statisticians of the journal should pay a high role screening of articles. However most of such inappropriate uses involved basis statistical tests. This also suggested that development of curriculum that cover these methods, inparticular analysis of matched study, should be considered as a high priority.