

MedicReS Good Biostatistical Review Standards (GBRS) Release 1.2, 22 Feb 2010 [1]

GBRS Subtitles	GBRS Questions
Study Design	<p>Was a suitable design used to achieve the objective?</p> <p>Was/Were reporting guideline(s) suitable for study design used? [2]</p> <p>Was appropriate control group used?</p> <p>Were any efforts made to avoid potential sources of bias?</p>
Sample Size	<p>Was minimum sample size calculated?</p> <p>If calculated, was pre-study calculation of sample size reported?</p>
Participants	<p>Were socio-demographic characteristics of participants and those who didn't wish to participate reported in the study?</p> <p>Were withdrawals from study independent of study groups and/or doses?</p> <p>Was a flow diagram of participants given for all stages of study?</p>
Summary Statistics	<p>Were the validity and reliability of measurement methods used reported in the study? (Gold standard, inter-rater agreement)</p> <p>Were the analysis of randomness of missing values and outliers made?</p> <p>Were appropriate summary statistics used?</p> <p>Were there any misuses of standard error?</p> <p>Were confidence intervals calculated for all of the summary statistics used in the study?</p> <p>Were the terms 'relation', 'correlation', 'difference' and risk terms used correctly?</p>

Statistical Analysis

- Were statistical methods compatible with study design and variables which are used in this study?
- Were any assumptions of statistical methods violated?
- Was the choice of parametric or nonparametric test correct?
- Were all statistical methods used in the study reported in methods section the paper?
- Was it stated in the study which statistical method was used for which hypothesis?
- Were covariant and effect mixing variables considered during analysis? If necessary, was multiple data analysis conducted?
- Was multivariate analysis necessary? If necessary was it used correctly?
- Were subgroups constituted during data analysis?
- Were method and aim of subgroup analysis correct?
- Were Cutoffs used for quantitative tests? if used, how were they determined ?
- Were subjective criteria used for qualitative tests? if used, how they were determined?
- Was sample size sufficient for subgroup analysis?

Tables and Graphs

- Was the number of significant digits in tables used correctly?
- Were the graphics selected compatible with data analysis?
- Were indications and interpretations of ratios and percentages in tables in accordance with the content?
- Were both significant and non significant p values given in tables?(to avoid publication bias)

Interpretation

- Were indication, interpretation of p-values in study and generalizations made correctly?
- Were both statistical and clinical significance values of results discussed?

Ethics

- Was the statistical software used commercial? If commercial, was this usage legal?
- Was there a statistical expert contribution in the material? If so, was this contribution valued?

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[1] KANIK, A, "How to Analyze Data" 7th International Congress on Headache in Children and Adolescents, MAY 17-21, 2008 Istanbul, TURKEY, CEPHALALGIA, Volume: 28 Issue: 4 Pages: 419-419 .

[2] Simera I, Moher D, Hoey J, Schulz KF, Altman DG. A catalogue of reporting guidelines for health research. Eur J Clin Invest 2010 Jan;40(1):35-53. <http://www.equator-network.org>