Legacy, Proprietary, and Open-Source Software and Interdisciplinary Collaborations: A Comparative Case Study

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Purpose: Technology evolves rapidly, presenting opportunities and perils. This case study compares analyses done with the DATASIM, SPSS, SAS, and R statistical analysis and graphics packages to evaluate the utility of nurses' using and advocating use of R in their interdisciplinary collaborations.

Background: Nurses in interdisciplinary collaborations involving legacy hardware and software experience logistical, technological, and communication problems when using different architectures and operating systems. Open source software may cost less and facilitate inter-disciplinary collaborations if it solves such problems and facilitates data collection, sharing, and analysis.

Approach: The authors replicated analyses originally performed with DATASIM, a legacy DOS program, compared with identical analyses using SPSS, SAS, and R, to compare the accuracy, cost, support, accessibility, and availability for all four programs.

Major Points & Rationale: Free, open-source statistical and graphic software has come of age. Nurses involved in interdisciplinary collaborations can improve their ability to communicate, share responsibility, and lead such endeavors by learning how to use software available on both older and newer equipment and diverse operating systems.

Conclusions: This study provides valuable evidence supporting use of open source statistical and graphical software when collaborating with other disciplines. Similarities and differences in the four candidates were reviewed and demonstrated that R, the open-source package was as accurate, relatively easy to use, and would be more widely available to all team members in professionally and geographically distant locations, and with different material and computing resources. Nurses participating in interdisciplinary collaborations should evaluate using R for analyses and graphical displays.

First Author's E-mail Address: lapchama@shu.edu
Program Selection: Fourth International Evidence-Based Nursing Preconference - Oral Presentations and Posters
Topic Selection: Methodological Issues in Translational Research
Learner Objective #1: The learner will be able to Describe advantages and disadvantages of legacy, standard and alternative statistical packages.
Learner Objective #2: The learner will be able to Evaluate R versus alternatives using presented data and analyses

Keywords: interdisciplinary research, open-source software, statistics