Reviewer's report

Title: Computer-aided DSM-IV-diagnostics - Acceptance, use and perceived usefulness in relation to users' Learning Styles

Version: 1 Date: 7 August 2004

Reviewer: Dominik Aronsky

Reviewer's report:

General

The study evaluates how different learning styles of psychiatrists influence the acceptance, use, and perceived usefulness when using a computerized diagnostic decision support tool. Learning styles were obtained from 250 psychiatrists nation-wide and a group of 49 psychiatrists from three clinics. A patient's case with three diagnoses was presented to the 49 psychiatrists who were asked to interact with a diagnostic decision support system to determine the diagnosis. From this perspective the paper has the potential to be a significant contribution. The study has an interesting objective that sheds light on potential factors influencing physicians' acceptance level of computerized decision support systems.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Subjects: For a better understanding of the examined population the paper requires a more detailed description of the included psychiatrist, such as age, gender, years in practice or current training level, etc. This should be reported by the different strata, i.e., group of 250 psychiatrists, group of specialists and group of non-specialists.

Diagnostic decision support system: Only one case was presented to the group that used the decision support system. In addition, the case was the first interaction after a short training session. This is a major methodological limitation that may have considerable impact on the validity of the results as unfamiliarity with the system may influence the study's outcome variables. One approach is to have 3 training cases during which users become familiar with the operation and capabilities of the system. Another 3 cases are then used for the evaluation, while the training cases are not considered. Unless all study subjects are on comparable levels of experience, different levels of case difficulty should be considered (e.g., easy, moderate, difficult). Results of the initial case should be discarded. Additional experiments (present more than one case to subjects) would considerably strengthen the study and is considered a requirement for publication.

Review of literature: The review of diagnostics decision support systems is very limited and misses major publications of medical diagnostic decision support systems. Other publications that examine the utility of diagnostic decision support systems for physicians on different training levels are also missing. (e.g., Miller et al. JAMIA 1994 for a review of medical diagnostic decision support systems; or Friedman CP et al. JAMA 1999).

Statistical analysis and reporting: The procedures for statistical analyses need to be described in the methods section, such as the type of analysis, etc. The authors should consider a review by a statistical consultant for appropriate description and reporting.
Survey instruments: The survey instruments need to be described in more detail. Unless a previously developed and published survey instrument (e.g., for assessing learning styles) was used (should be referenced at the appropriate position in the methods section), it is strongly suggested to provide the questionnaire as an appendix (or figure). The paper remains unclear whether the learning styles were assessed with a newly developed survey using Kolb’s framework or whether Kolb’s survey instrument was used. The pre-assessment survey for the 49 subjects should be described in more detail (consider including the full survey as a figure or appendix). In addition, the survey measures should be reported (professional training, DSM-IV, SCID training, assessment of computer skills). It is also unclear whether SCID training is a standard training for psychiatrists. What kind of instruction was provided to users? More information about the post-assessment survey is needed (e.g., four-grade scale).

Outcome variables: The method section describes what type of measures were collected in the computer log file. The results associated with the described measures should be reported (e.g. total session time, number of criteria judged, etc.) What are the definitions of “proposed number of diagnoses,” “number of regretted criteria-judgment,” etc.?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

- Abstract: The methods and results section in the abstract need to be in better alignment with and should better represent the content of the paper.
- The methods section could benefit from subheadings, such as “Subjects,” “Data collection,” “Survey instrument,” “Statistical analysis,” etc.
- The result section needs to include a more detailed description of the “general variables” and should include the statistical data. What does it mean, “there is a tendency for the non-specialist group”?
- The authors are encouraged to use consistent terminology: for example, use DSM or DSM-IV.
- Where appropriate percentages should be rounded to avoid artificial precision.
- The paper has several typographical errors. Please check references for accuracy and completeness (e.g., ref# 35 has typographical error, ref# 37 is incomplete). Overall the paper is easy to understand and follow; however, some language corrections would increase the clarity of the paper.
- It is suggested that the results section be structured with subheadings; one approach is to report first the learning styles of the two study groups and then report the results from the diagnostic decision support system and the post-assessment data.
- The information in the section “Conclusions from acceptance, use and perceived usefulness” (information on page 17) should only include results and then be interpreted in the discussion section.
- The conclusion section remains hypothetical and vague; the presented data are too limited to support these conclusions.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research
interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes

**Declaration of competing interests:**

None