Reviewer's report

Title: Barriers to alcohol and other drug treatment use among Black African and Coloured South Africans

Version: 2 Date: 2 July 2012

Reviewer: Brian Perron

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Please consider all the following comments to be "Major Compulsory Revisions."

INTRODUCTION

I found the introduction to be well written and without the need for further revision.

METHODS

The use of the time-line follow back is a notable strength of the study, as many studies of service utilization rely on retrospective self-reports with little attention to use of other strategies to improve the reliability of such reports. The case-control approach is also a strength.

It is unclear why treatment use is included in the parentheses with quotes following "Cases" in the second sentence of the second paragraph.

The study indicates that "Of the 440 persons screened, all met the inclusionary criteria." The inclusionary criteria have not been explicated in the article.

For the recruitment of controls, a requirement was that the individual had to have "high levels of health and social problems." How was this assessed? How were health and social problems actually defined?

The "Access to Treatment Questionnaire" needs to be described in detail, along with any known psychometric properties.

The TCU Drug screen needs to be described in further detail. This includes a more complete description of the measure and known psychometric properties. Does this instrument have any validity evidence for use with this population?

The section "Participants" needs to be integrated with the foregoing section that actually mentions inclusionary and exclusionary criteria. It would be helpful to clearly differentiate the criteria for the cases and the controls separately.

A separate section called "Measures" is introduced, but other measures preceding this section were described. It is recommended that all measures be described in a single section.

All the measures described need further details. Measures are presented without
describing the actual content, length, psychometric properties, scale, etc.

In the data analysis section, the word "prediction" should be changed to convey correlations or associations.

The step-wise procedure for the data analysis needs further description. How was this done?

RESULTS

All results should be described in terms of their strength of association, as the p-values are not helpful in conveying the relative importance. For example, the authors indicated in the methods section that "Chi-square tests of association were conducted on categorical variables by utilization and odds ratios were calculated to measure the strength of these associations." Table 2 shows the results of the chi-square but not the measure of association (Odds Ratios). The predisposing variables section in the results doesn't indicate any measures of association, and this information is not present in Table 2.

I believe Table 2 would be much more meaningful if the chi-square values were replaced by odds ratios and 95% confidence intervals (for establishing statistical significance). The t-values can be enhanced by selecting an appropriate measure of effect size (e.g., point biserial correlation). Many of the associations are statistically significant but have no practical significance. This issue can be resolved by focusing on effect sizes.

The section on the logistic regression model indicated that the "full model" versus the model with the intercept only was statistically significant. What variables are part of the "full model?" All of the variables in the study, or only those that were statistically significant at the bivariate level?

The reported R-square values, which are actually pseudo R-square values, appear to be extraordinarily high, approaching almost perfect prediction. The authors are encouraged to re-review these values and compare those with existing studies on service utilization. R-square values are almost never this high, which suggests a problem. A value of 1.0 indicates a perfect fit with the data, so it is surprising to see values > .8 and .9.

Table 1: All abbreviations need to be spelled out as a footnote so the Table can stand alone. It appears that the other values in parentheses need to be n-sizes, which needs to be noted.

Table 2: Replace chi-square with odds ratios and 95% Confidence intervals. For t-test, a measure of association should be reported (e.g., point biserial).

Table 3: This table raises further questions about the measurement. For example, how was "traveling time to treatment" assessed and on what scale. This question extends to the other items as well. It is not clear how the variables that were not entered into the equation were excluded. Was this decision based on the bivariate analysis, or the step-wise procedure? The authors noted the use
of a step-wise procedure, but this step-wise procedure is not understood based on the table.

The Wald (df) could be removed, along without the b and SE. The authors could then bold the significant values based on the 95% confidence interval. Variables with continuous measures should include the range of values to facilitate interpretation.

If gender was adjusted in the model, why was that not included in the table to communicate the significance?

The model fit of the model(s) should be reported as a footnote.

Based on the values presented in the table, it does not seem possible that these models could be approaching near perfect fit (i.e., high R-square values), requiring further explication and review of the results.

Was the variance inflation factor of the model(s) examined to assess for possible problems of high intercorrelations?

DISCUSSION and CONCLUSION

I found these sections to be well written without the need for further revision.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.