Reviewer's report

Title: Quality of life associated with treatment adherence in patients' with type 2 diabetes: a cross-sectional study

Version: 1 Date: 7 October 2007

Reviewer: Jeffrey Johnson

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The authors have measured and compared aspects of adherence to antidiabetic medication and quality of life in 238 subjects with type 2 diabetes, selected from a list of chronic disease patients on an insurance registry in Mexico.

Major revisions

1. Correlation between glycemic control and quality of life – the authors indicate on page 3 that diabetic patients with poor metabolic control report lower quality of life, citing one paper (reference #8). In fact, there is a much larger literature that has repeatedly shown that glycemic control, as measured typically by A1c, is only weakly associated with self-reported quality of life. The authors should expand their review of the literature on this topic.

2. Measures of adherence – the authors indicate they have applied three measures of adherence, but I would disagree. I suggest that the authors have assessed three different aspect or factors related to adherence (behaviour, knowledge, and attitude), but not all are adherence measures. As the authors themselves have identified their conception of adherence (on page 5) as the WHO definition relating to medication behaviour, so by this WHO definition, only the pill count is a measure of adherence. The measures of medication knowledge and attitude toward adherence are likely important precursors to adherence, but are not adherence measures per se.

Further to this point, it would be interesting to see the relationship between these aspects of medication adherence (behaviour, knowledge and attitudes). As these are likely a complex relationship, the authors might consider a more advanced analysis, such as structural equation modeling to assess the interplay between these factors and quality of life.

Finally, on this point, I found the acronyms for the aspects of adherence confusing and difficult to remember as I read through the paper. I suggest using a single word – behaviour, knowledge and attitude – to represent the three different measures.

3. WHOQOL-100; on page 7, the authors have done a good job of describing the measure of quality of life, including the previous translation process. The theoretical basis for the WHO measure, in page 5, does not really fit under that heading (i.e., study population) and could be moved to the section describing the
measure (i.e., to page 7). The same would be true for the theoretical basis of adherence initially presented on page 5.

3. Patient selection – the authors have excluded those patients with type 2 diabetes with complications or on insulin. I think this is an unfortunate decision, as these are likely to be important determinants of both adherence and quality of life. Indeed, as noted above, there is generally little correlation between glycemic control and quality of life, but there is a strong correlation between presence of complications and quality of life.

4. Confounders – Related to point #3, the authors have not done a very good job of identifying potential confounders in the relationship between adherence and quality of life. A comparison is made between mono and polytherapy, but this distinction is limited to oral antidiabetic medications. The authors point out in a number of occasions that other drug therapy or multiple comorbid conditions (e.g., such as hypertension or others) may impact on either adherence or quality of life.

Related to this, the analysis undertaken was quite simplistic, limited to univariate comparison between groups. A more sophisticated approach would be a multivariate analysis, allowing for adjustment of multiple confounders in the relationship.

5. In the analysis and presented in tables 4-7, the authors have dichotomized the adherence aspects of behaviour, attitude and knowledge, and labelled these as “with” or “without” the particular aspect. In each case the authors have defined with” as being in “90 to 105%”. I would suggest the authors recognize that each of the aspects of adherence are on a continuum, and should therefore refer to ‘strong’ or ‘weak’ knowledge, ‘good’ or ‘poor’ behaviour, and ‘positive’ or ‘negative’ attitude.

Minor essential revisions

Was the measure of attitude to treatment adherence previously developed and tested for validity? The structure of the scale is described, and the internal consistency is reported as an alpha of 0.74, but there is no reference to any previous validation.

On page 7, the description of the statistical analysis is confusing. The sentence starting “ATA were analyzed...” doesn’t make sense as it refers to both ANOVA and Kruskal-Wallis being conducted.

Fasting blood glucose should be reported in mmol/L for the international audience.

On page 12-13, the initial part of the last paragraph on the properties of the WHOQOL-100 is not really relevant to the discussion. I suggest deleting that part of the paragraph up to the citation of reference 14, but retain the remainder, starting with “We selected patients....”
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: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

'I declare that I have no competing interests'