Reviewer's report

Title: Parental palliative cancer: psychosocial adjustment and health-related quality of life in adolescents participating in a German family counselling service

Version: 1 Date: 20 August 2012

Reviewer: Tom Fanshawe

Reviewer's report:

Statistical Review, BMC Palliative Care MS 1075498636913210

In this review I concentrate on the statistical methods used, and how the results are interpreted. In my opinion a number of points need to be clarified in order to establish exactly what analysis has been carried out, and I also recommend some changes in the presentation of results. I would not recommend the paper for publication before the following points are addressed.

1. I do not find the conclusions given in the last paragraph of the abstract to be representative of the paper as a whole. None of the analysis presented investigates whether participants conceal their psychosocial burden in order to protect their parents, and in the discussion section this issue is addressed only with phrases such as “it might be speculated”. I suggest rewriting this part of the abstract to focus on the evidence that this study is able to provide.

2. To what extent were the significance levels adjusted by Bonferroni correction? How many were corrected, and to what extent? Are p-values given in the paper calculated before or after Bonferroni correction? If before, what level of significance has been used to judge statistical significance? In the results and the abstract, there are statements of non-significance accompanied by ‘p>0.0045’ and ‘p>0.025’, which is somewhat surprising as there is nothing to indicate that anything other than a significance level of 0.05 (after Bonferroni correction) has been used.

3. page 6, statistical analyses paragraph 1: what is ‘COV’?

4. page 6, statistical analyses paragraph 2: ‘BC Bootstrapping’ is not a commonly-used abbreviation for bias correction, if this is what is meant: please clarify. Similarly ‘BCa’ in results section.

5. page 6, statistical analyses paragraph 3: states that the data are unsuitable for fitting models that allow for family as random effect, but then gives ICCs as variance components or random effects models have been fitted after all. Was family included as random effect or not? And was there any clustering by study centre, another potentially important source of correlation between individuals?

6. The rationale behind the means to deal with missing data is extremely ambiguous. By ‘biased data sets’, do you mean ‘biased estimates’? Does the ‘complete data’ set only include individuals with complete data on all of the
variables SDQ, Kidscreen and Kidcope? Without using some form of imputation, how can you compare the results from using this dataset to results from the ‘original data set’, if the latter has a substantial amount of missing data? This is a concern given the apparent difference in frequency of missing data according to disease stage.

7. page 7, line 1: there are 66 families (Table 1), even though there are only 49 patients – is this correct?

8. page 7, ‘Psychosocial problems’ section, last paragraph: why has the test statistic changed from to an F-statistic from the T-statistic reported previously? If because of adjustment for possible confounders, what is the reason for not doing this consistently for all outcome measures? When reporting results of this type (in this and other sections of the results), it is preferable to give point estimates and confidence intervals for differences between groups. Otherwise it is impossible to gauge the magnitude of any effects found, whether statistically significant or not.

9. page 8, line 4: “children reported significantly lower HRQoL as they grew older”. This appears to be an error of interpretation – a cross-sectional study is unable to identify within-individual longitudinal trends.

10. The results of the mediator analysis are potentially interesting, but quite under-developed. Is there any indication which of the included Kidcope items are primarily responsible for the indirect effect? What is the meaning of the point estimate of the indirect effect? What are the estimates of the other parameters in the model? Does this model fit better than the simpler model with no mediators, and if so, does it the data fit adequately? There are clear limitations of using mediator analyses for cross-sectional data, which are not fully acknowledged.

11. Table 1: error in calculation of percentages for specialised palliative care yes/no.

12. Table 3 and throughout: the F distribution has two parameters, not one.

13. Table 3: what is the difference between B and beta? What is VIF?