Author’s response to reviews

Title: Psychosocial factors in adults with chronic kidney disease: characteristics of pilot participants in the Tasmanian Chronic Kidney Disease study

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Author’s response to reviews: see over
RESPONSE TO REVIEWERS’ COMMENTS

Reviewer’s report 1

Title: The influence of psychosocial factors on the progression of chronic kidney disease: characteristics of pilot participants in the Tasmanian Chronic Kidney Disease cohort study

Version: 1 Date: 22 January 2013

Reviewer: Rachael Morton

Reviewer’s report:

This manuscript presents the methods and baseline results of the Tasmanian Chronic Kidney Disease cohort study.

The manuscript is well written and the study aims are important and novel. The paper could be improved with attention to the following:

1. The title is a bit misleading - as there is little data on the association between psychosocial factors and progression of CKD. Consider revising.

The title has been amended as follows:
‘Psychosocial factors in adults with chronic kidney disease: characteristics of pilot participants in the Tasmanian Chronic Kidney Disease study’

2. The sample size is small and renders some concerns about the power of the study to find any statistically significant associations between factors and progression of disease.

We have acknowledged this limitation in the text as follows:

(Page 18, paragraph 2) ‘Whilst the participation rate in the current study appears low, it is comparable to previous pilot studies involving adults with chronic disease (Schröder, Denis et al. 1995) and consistent with evidence that those with poorer health status, lower levels of functioning and higher levels of psychological distress are less likely to participate in population-based research (Galea and Tracy 2007). Despite this, efforts to increase participation and limit attrition will be important in ensuring adequate statistical power to examine associations between the key variables of interest.’

3. Please provide a rationale and or reference for the four chosen SEIFA categories (i.e high, medium-high, medium-low and low).

The SEIFA categories, and corresponding data in Table 1, have been revised as follows:

(Page 8, paragraph 2) ‘Area-level socio-economic status (SES) based on residential postcode was derived using the Australian Bureau of Statistics socioeconomic index for areas (SEIFA) (Australian Bureau of Statistics (ABS) 2001). The SEIFA is a summary of four indices designed to measure different aspects of SES based on questions asked in the 2001 Census of Population and Housing (Australian Bureau of Statistics (ABS) 2001). The Index of Disadvantage is derived from attributes including low income, low educational attainment, high unemployment and employment in unskilled occupations. For the current analysis
postcodes were divided into four quartiles according to ranking in this index, the first quartile representing greater disadvantage compared with other geographical areas.’

4. Household and individual income bands are a good measure of socio-economic status. Please state why this variable was not collected alongside education and employment status.

Household income was collected and income bands have now been included in Table 1. We have also included the following information in the text:

(Page 13, paragraph 1) ‘Around 70% of participants reported a household income of less than AU$31,200 per year.’

5. Which version of EQ-5D was used, the 3 level or 5 level?

This information has now been included as follows:

(Page 12, paragraph 1) ‘In the current analysis responses to the EQ-5D 3-level version were dichotomized as ‘no problem’ versus ‘some/severe problems’.’

6. Please report the baseline scores for EQ-5D in Table 2. Otherwise the Table title needs to be changed.

The title of Table 2 has been amended as follows:

(Page 30) ‘Table 2. Baseline descriptive statistics for health-related quality of life measures (KDQOL-SF 1.3 and EQ-5D), the Tasmanian Chronic Kidney Disease Study’

7. Please clarify how will the CKD progression outcome be measured? i.e. As a continuous variable with a decrease of eGFR or shift from stage 4 to stage 5 CKD?

This has been clarified in the text as follows:

(Page 11, paragraph 3) ‘Kidney disease progression was measured both continuously according to decrease in mean eGFR and categorically per the Kidney Disease Outcomes Quality Initiative staging system (Levey 2002) using the Modification of Diet in Renal Disease formula (Levey, Coresh et al. 2006).’
8. A large meta-analysis of utility estimates in CKD found a mean utility of 0.80 in pre-treatment CKD patients. (See Wyld M et al 2012) http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001307. This reference should be added to the EQ-5D methods section on page 10.

This reference has now been added to the manuscript as follows:

(Pages 11-12) ‘The EuroQol Group’s EQ-5D is commonly used to calculate quality adjusted life years (QALYs) (Liem, Bosch et al. 2008) and has been used extensively to assess utility-based quality of life in CKD patients (Wyld, Morton et al. 2012).’

**Level of interest:** An article of outstanding merit and interest in its field  
**Quality of written English:** Acceptable  
**Statistical review:** No, the manuscript does not need to be seen by a statistician.  
**Declaration of competing interests:**  
I declare that I have no competing interests

**Reviewer’s report 2**

**Title:** The influence of psychosocial factors on the progression of chronic kidney disease: characteristics of pilot participants in the Tasmanian Chronic Kidney Disease cohort study

**Version:** 1 **Date:** 25 November 2012

**Reviewer:** Germaine Wong

**Reviewer’s report:**

Thank you. An interesting study that assess the association between psychosocial factors and the progression of CKD, quality of life and costs of managing patients with CKD. However, I have several questions and concerns regarding the methodological aspects, designs and feasibility of the study.

**Major compulsory revisions:**

1. **Please clarify the meaning between “prospective association” between depression and adverse outcomes in patients prior to renal replacement therapy. (page 4, introduction).**

We have rephrased this sentence as follows:

(Page 4, paragraph 2) ‘Depression is associated with increased mortality and decreased quality of life in patients on dialysis (Kimmel, Peterson et al. 2000; Lopes, Bragg et al. 2002; Hedayati, Bosworth et al. 2008), however few studies have examined the influence of depression on disease progression and adverse outcomes in patients with CKD prior to the initiation of kidney replacement therapy (KRT) (dialysis or transplantation) (Hedayati, Minhajuddin et al. 2010; Tsai, Chiu et al. 2012).’

2. **There are a lot of QoL and psychosocial measures, but what are the primary outcomes of the study?**

The primary outcomes of the study have been clarified as follows:
Primary outcome measures were kidney disease progression, use of KRT and subjective health-related quality of life. Kidney disease progression was measured both continuously according to decrease in mean eGFR and categorically per the Kidney Disease Outcomes Quality Initiative staging system (Levey 2002) using the Modification of Diet in Renal Disease formula (Levey, Coresh et al. 2006). Use of KRT was obtained by consented linkage to the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA). Health-related quality of life was assessed using both a psychometric health status measure (KDQOL-SF 1.3) and a utility-based measure (EQ-5D) (Cleemput, Kesteloot et al. 2004).

3. How did the authors calculate/estimate the sample size of the study
One of the main reasons for conducting a pilot study is to determine initial data for the primary outcome measure, in order to perform a sample size calculation for a large scale investigation (Lancaster, Dodd et al. 2004; Thabane, Ma et al. 2010). As such a sample size calculation was not ascertained for the current cohort. This limitation been acknowledged in the manuscript as follows:

The current data was used to perform a sample size calculation for the large scale cohort study. We have not included this analysis in the manuscript but are amenable to including it if requested by the editor.

4. Please justify the use of the different psychosocial and QoL measures. Many of which appeared to the disease specific. Whilst some are generic and utility-based? It is unclear why these were chosen and the relevance for the outcomes of interest.

The relevance of each psychosocial and QoL measure has been clarified as follows:

Psychosocial factors were self-reported using the Patient Health Questionnaire (Kroenke, Spitzer et al. 2001), the Beck Anxiety Inventory (Beck, Epstein et al. 1988) and the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem et al. 1988). All measures have previously been validated in people with kidney disease and were included to facilitate comparisons within the literature. The Beck Anxiety Inventory was included in order to distinguish symptoms of anxiety from those of depression.

Health related quality of life was assessed using both a psychometric health status measure (KDQOL-SF 1.3) and a utility-based measure (EQ-5D) (Cleemput, Kesteloot et al. 2004). Health status measures discriminate levels of functioning between groups and detect changes in function over time while utility-based measures are utilized in cost-effectiveness analyses and to guide decisions regarding resource allocation. The EuroQol Group's EQ-5D is commonly used to calculate quality adjusted life years (QALYs) (Liem, Bosch et al. 2008) and has been used extensively to assess utility-based quality of life in CKD patients (Wyld, Morton et al. 2012). The EQ-5D has five dimensions (mobility, self-care,
usual activities, pain/discomfort, and anxiety/depression). In the current analysis responses to the EQ-5D 3-level version were dichotomized as ‘no problem’ versus ‘some/severe problems’.

5. Feasibility of conduct and follow-up of the study are of concern. What are some of the measures that the authors may employ to improve the overall participation rate of the study? (A participation rate of 48% seems rather low).

We have included some possible explanations for the participation rate and provided some suggestions for improving participation as follows:

(Page 18, paragraph 2) ‘While the participation rate in the current study appears low, it is comparable to previous pilot studies involving adults with chronic disease (Schröder, Denis et al. 1995) and consistent with evidence that those with poorer health status, lower levels of functioning and higher levels of psychological distress are less likely to participate in population-based research (Galea and Tracy 2007). Our aim is to recruit 700 participants for the state-wide prospective cohort study. This represents 30% of the target population (Jose, Otahal et al. 2009) which is well below the current response rate of 47%. Despite this, efforts to increase participation and limit attrition will be important in ensuring adequate statistical power to examine associations between the key variables of interest. Future strategies involve recruiting face-to-face via treating physicians and assessing participants during usual care thereby increasing response rates and reducing participant burden.’

6. Previous studies have examined the association between depression and health outcomes in patients on dialysis. What is the novelty and the policy implications of this proposed study?

We have clarified the direct impact and policy implications of the current study as follows:

(Page 5, paragraph 3) ‘Findings will have direct translation into clinical practice (by identifying psychosocial factors as important predictors of outcomes), health service provision (by focusing health services on quality of life rather than extending life at all costs) and health policy.’

(Page 19, paragraph 2) ‘Findings from this study have the potential to provide an evidence base for revising healthcare decision making and treatment pathways in order to optimise the care of patients with CKD.’

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

Quality of written English: Not suitable for publication unless extensively edited Statistical review: Yes, and I have assessed the statistics in my report. Declaration of competing interests: No specific competing interests.

Editorial Comments: As you will see from the referees’ reports, several concerns have been raised that we would like you to address in a revised manuscript. Please ensure that you respond to each of their
concerns as thoroughly as possible, as your revised manuscript will be returned to the referees for further consideration.

Please also ensure that your revised manuscript conforms to the journal style (http://www.biomedcentral.com/info/ifora/medicine_journals). It is important that your files are correctly formatted.

It is important that a cover letter accompanied your revised manuscript submission. This should provide a detailed point-by-point response to each of the referees' concerns, describing exactly how you responded to each point and where you can find the amendment in your revised manuscript (e.g. document line and/or page numbers). Please also highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made to the revised manuscript to make it easier for the Editors to give you a prompt decision on your manuscript.

-- In addition to the Referees' comments, could you please also address the following editorial points --

1. Copyedit

We recommend that you ask a native English speaking colleague to help you copyedit the paper. If this is not possible, you may need to use a professional language editing service. For authors who wish to have the language in their manuscript edited by a native-English speaker with scientific expertise, BioMed Central recommends Edanz (www.edanzediting.com/bmc1). BioMed Central has negotiated a 10% discount to the fee charged to BioMed Central authors by Edanz. Use of an editing service is neither a requirement nor a guarantee of acceptance for publication. For more information, see our FAQ on language editing services at http://www.biomedcentral.com/authors/authorfaq/editing.

The manuscript has now been extensively revised.