Reviewer's report

Title: Specialist palliative care support is associated with improved pain relief at home during the last 3 months of life in patients with advanced disease: analysis of 5-year data from the national survey of bereaved people (VOICES)

Version: 0 Date: 20 Sep 2018

Reviewer: Tim Luckett

Reviewer's report:

This is a potentially important report of a very large representative sample. However, the quality of writing lets it down somewhat, in that the narrative is sometimes poorly structured and there are numerous grammatical errors. I have identified several specific issues below, but recommend that the whole manuscript be properly edited.

The title and Methods both in the Abstract and manuscript should make it clear that this was a cross-sectional survey requiring family members to summarise experience over the last 3 months of life on one occasion rather than a longitudinal survey conducted at different time points over 3 months.

The definition of palliative care also needs to be given both in the Abstract and Methods to make it clear this does not refer only to specialist palliative care services. The Result that people with cancer were more likely to receive palliative care needs to be presented within the context that one of the providers was cancer specific. This also influences the conclusion that increased receipt of palliative care by people with non-malignant diagnoses is likely to result in better pain relief - i.e. would Macmillan nurse care be as appropriate for people with other diseases? My understanding from the Results is that people with cancer were significantly more likely to receive good pain relief even after controlling for receipt of palliative care? What proportions of people received care from each of the palliative care providers? And will distribution allow the researchers to compare the relationship with pain relief and the different services?

I would strongly recommend replacing reference to 'advance care planning' with 'documentation of preferred place of death' throughout to show how limited the measure was.

More specific suggestions are as follows.

Abstract
Change verb tense in the first sentence from 'reported pain' to 'report'
Suggest replacing 'expressed' with 'preferred' in the following: 'most commonly expressed place of death'
Insert 'were' into 'who cared for at home'.

Use 'who' instead of 'that' for people (i.e. 'decedents', 'patients' etc) here and throughout.

Results - final sentence; and therefore to experience better pain relief, as the rest of the Results might suggest?

Introduction

First para - There is an update to reference #1 that should be included.

Are the sentences on access to opioids relevant?

Second para first sentence - needs to end with a statement that most people die in hospital.

Third para - The first two sentences don't lead at all logically to the aim of the study; I suggest they are moved to the Discussion to be explored in more detail. I also don't understand why the second sentence starts with 'In routine care, however'? I suggest leaving off the final sentence of this paragraph because, in fact, the analysis looked at a whole range of factors associated with pain relief.

Methods

A rationale is needed for the choice and definitions of independent variables, especially for palliative care and ACP.

'Did he/she get any help from any of the services' requires a question mark. Conversely, no question mark is needed after 'preferred place of death'.

Analysis

The sentence 'the differences in the decedents' characteristics were compared using $\chi^2$ test' doesn't quite make sense.

'Multivariate' is much more widely used than 'multivariable' to describe logistic regression.

Was any attempt made to find the most parsimonious model, or were independent variables always left in if they improved fit according to the likelihood-ratio test?

I recommend review by a statistician.
Results

Figure 1 - should be 'respond' rather than 'response'.

I thought Tables 1 and 2 could be combined; indeed, Table 2 looks a bit odd being separate.

Line 174 - no bracket before 'Over'.

What amount of variance in pain relief was explained by the multivariate model?

Is there a reason ORs and CIs are given for some but not all variables in the Results? Arguably, some of this text could be removed as it repeats information in the table.

Discussion

The first paragraph should be focused on pain relief rather than access to palliative care, given this was the main focus of the analysis. The reference to inequity of access should be clarified to indicate this refers only to cancer versus non-cancer (with the caveats suggested earlier) rather than inequity based on other social determinants as has been found by other studies.

I am less concerned about the risk of bias from retrospective reporting than the authors are. Bereaved relatives' memory of the quality of care is an important outcome in its own right. Also, the multivariate analysis is still valid given recall bias should have affected all people equally.

What possible explanations could there be for other findings from the multivariate analysis - for example, differences in pain relief reporting according to relationship to patient, the limited difference as a factor of urgent help seeking, or the surprising finding (in the context of other literature) SES was not strongly associated with outcomes? I think the authors could offer much more exploration of these results, especially where there were changes in the strength of associations from univariate to multivariate results.

The authors make a valid point that 'eligibility criteria for referral to palliative care services include symptoms that are uncontrolled or complicated' but don't follow this with the logical conclusion that, if anything, we might have expected those referred to palliative care to have higher baseline pain and therefore the likelihood for estimates of pain relief associated with palliative care to be an underestimate.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
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