Reviewer's report

Title: Discomfort and agitation in older adults with dementia of the Alzheimer's type

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Reviewer: Martha Buffum

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General
This is an interesting article that addresses an important topic, expanding on prior research in an effort to elucidate types of agitation that might be related to discomfort. The methodology needs clarifying before publication should be considered.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

More detail is needed that is essential to the article. First, the study needs to include a design in the methods section (and in the abstract). Second, the sample needs more detail for the patients --the number of nursing homes from which patients were recruited, whether inclusion criteria included patients with painful diagnoses. And the staff sample needs elucidation also in terms of numbers of RNs and CNAs and the number of nursing homes from where they are recruited. The consenting of patients through surrogate or other means should be addressed.

Third, the scales need more detail. It would be helpful to know the rationale for selecting the DS-DAT. (Herr's 2006 publication in Pain Management describes more scales) The DS-DAT needs revision regarding scoring. That is, each of the 9 items is measured from 0 to 3 for the presence or absence of discomfort based on frequency, duration, and intensity. The total from each item is summed to yield a score from 0 to 27. Hurley's (1992) work described patients with fever having scores near 7 and at peak discomfort up to 11. Because the average score in the article is 4.2 and the authors describe item scores, it is not clear how their score relates to the actual tool or whether the patients were uncomfortable at all. The authors should refer to the review of scales at http://www.cityofhope.org/prc/elderly.asp for the overview of the DS-DAT. Also, Young (2001) described the correlation between CMAI aggressive scale and the DS-DAT r=0.251. (This is cited in the website describing the DS-DAT.)

Another scoring concern with the DS-DAT is that the timing of the assessments are not mentioned. Hurley et al describe specifics about when assessments should be done. The authors should compare their findings related to scores in a discussion section about discomfort with works by Hurley et al, Young, and Buffum. The DS-DAT requires training to use and the methods section should include how the staff were trained and how interrater and intra-rater reliabilities were established.

The CMAI psychometric properties should be addressed. How do the scores on the CMAI relate to others’ work? Were these patients agitated? Was the scoring done the same way as Cohen-Mansfield describes? The scores described in the tables need qualifying as to indicators of agitation. Because the categories of agitation extend to a lengthy time period, the authors should clarify the time period that was marked for the study. The staff were given two weeks, but were ratings to reflect two weeks? Were staff told to rate for only the five minutes of observation? Were staff told to rate for the past week, based on chart review? based on their own recollection?

The training of the staff and/or their level of experience and education could have much to do with the study findings. Authors should mention whether there were differences between RNs and CNAs in the assessments. The demographics of the staff were mentioned in the results but mixed with the patients. Is there significance to the findings about the staff?

Results: The tables need more explanation in the text. Specifically, the 18% to 30% variance that is mentioned in the text is hard to find in the tables. It would be helpful to have the authors describe more detail from the statistical tests; this is not my expertise and I would defer to a statistician to determine whether the explanation is adequate. It is difficult to discern how the tables and text relate to one another though.

The meaning of all of the scores on all of the assessments need to be explained in terms of patient functioning. The finding that 60% take daily analgesics needs qualifying. Is this the proxy for patients having pain? Do some of the patients take regularly scheduled analgesics? Does daily mean once, more than once, prn, or all of these?

Lastly, the reference list has one author missing from #18. Should read Buffum MD, Miaskowski C, Sands L Brod M.
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
In the abstract: include in the results section of the abstract the percentage of variance; include in the methods section the design and tools.
In the body of the article:
Background: first sentence, remove the apostrophe in it's.
Procedure: first sentence, replace "to" with "on" as follows: "...the participants' units were asked to collaborate on this study." This change is also needed on page 10 when 13 nursing staff are mentioned as collaborating on the study.
Measures: The authors should comment on the required educational level for completing ADL, FAST, and SMAF assessments. Do CNAs usually do these? Or do the professional staff usually do these?

Discretionary Revisions (which the author can choose to ignore)

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: Needs some language corrections before being published

Statistical review: Yes

Declaration of competing interests:
I declare that I have no competing interests.