Author's response to reviews

Title: Paramedic assessment of pain in the cognitively impaired adult patient

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Version: 2 Date: 4 August 2009

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Response to reviewer feedback – Manuscript 5552855682369142 “Paramedic assessment of pain in the cognitively impaired adult patient”

I thank the reviewers for their considerable efforts in reviewing this manuscript and for highlighting areas for improvement. I have provided responses as follows:

**Reviewer 1**

It is incorrect to assert that pain is not experienced vicariously by others.

*I acknowledge that this statement is incorrect and have replaced this assertion with the following text:*

As pain is a personal experience with external manifestations that are associated with significant interpersonal variations of expression [Craig 2009] that limit generalisations regarding standards of pain behaviour, wherever possible the patient’s self report of pain should be sought to guide the clinician’s further assessment and management of this complaint.

Although pain severity is just one component of a complex and highly personal experience that involves sensory-discriminative, motivational-affective and cognitive-evaluative dimensions, paramedic assessment of pain severity is specifically sought to guide pain management decisions, which may include strategies designed to mitigate the cause of the pain and to provide relief from pain that includes efforts to manage the environmental, social and psychological mediators of the perception and expression of pain [Craig 2009]. In addition, the assessment and evaluation of the patient’s pain experience will influence pharmacological interventions aimed at providing relief from pain.

The assertion that pain cannot be validated by objective means is not clear. Current definitions of pain emphasize its nature as a subjective experience. It is not equivalent to pathophysiological states. Self-report and nonverbal measures of pain are objective. They do require validation. Perhaps the authors could be clear about what they mean by ‘objective’.

*The reference to “objective” has been deleted and I have attempted to respond to this by including the paragraph above.*

It is reasonable to assert that self-report of pain should be sought whenever possible, but it is incumbent upon authors to also note the limitations of this approach. While the paper acknowledges that self-report requires considerable cognitive, linguistic, and social competence, it does not make the important point that self-report is vulnerable to personal and situational bias.

*The effect that environmental, social and psychological mediators have on the perception and expression of pain has now been acknowledged in the previous paragraph.*

Particularly important is the notorious reluctance of seniors to report pain. This should be at least acknowledged.

*This has been addressed by the inclusion of the following sentence:*

*Even when pain assessment is encouraged or required, patients may be unable to communicate their experience to carers, or be reluctant to report pain due to concerns about*
treatment side effects or the possibility that they will be viewed as a complaining or difficult patient, a belief that has been documented in settings that include oncology [Reyes-Gibby 2003] and aged care[Yates 1995] [Fox 2004].

It is suggested that accurate assessment is needed to guide pain management decisions, but this is to “mitigate the cause” and dictate the “type and initial dose of any analgesic administered”. Is there no room for psychological, social or environmental intervention?

I acknowledge the importance of these other interventions and as such this section has been reworded to include discussion of “strategies designed to mitigate the cause of the pain and to provide relief from pain that includes efforts to manage the environmental, social and psychological mediators of the perception and expression of pain”.

Throughout the paper it is recognized that ‘reliable’ scales are needed. This term has specific psychometric meaning. Sometimes it seems to appear when the word ‘valid’ was probably intended.

These terms have been checked and changed to reflect their actual intention.

Can the assertion that dementia “does not involve impaired consciousness” needs to be defended.

This has been reworded: Although this disease may impair an individual’s ability to report pain, the ability to feel pain may remain unimpaired.

On p.11, clinical practice for UK paramedics is said to advise “that the use of pain scales in assessing patients with cognitive impairment may not be possible”. Are behaviourally-oriented measures not scales?

This has been reworded to more accurately reflect the fact that the guidelines do not recommend any particular behaviourally-based pain assessment tool.

The injunction to “Identify possible causes of pain” may be misleading because it ignores the large number of patients, cognitively impaired or not, for whom a pathophysiological basis of their complaints, or pain disability, cannot be identified. While all of us welcome evidence consistent with a disease or injury explanation, it should be clear that this confirmation is not needed.

This has been addressed by the modification to this paragraph as follows:
However, pain may have no identifiable pathological basis, and the confirmation of an injury or disease process to account for the pain is not needed. Withholding analgesia in the absence of an obvious source is inappropriate where other clinical cues suggest that the patient is experiencing pain.

Parenthetically, in the paragraph discussing the foregoing, it is observed “there is no strong evidence that patients with dementia suffer less pain.” It should be noted that work by Hadjistavropoulos et al., and Kunz et al., would lead one to believe they suffer more pain than cognitively intact people, if nonverbal measures are to be taken seriously.

This has been acknowledged by the inclusion of the following reference:
There is no strong evidence that patients with dementia suffer less pain, with some evidence suggesting that patients with dementia suffer more pain than those without cognitive impairment [Kunz 2009].

The discussion of nonverbal measures focuses upon the need to conduct observations over time, i.e., to have base rate data available. It is noteworthy that facial expression does make as substantial a demand. As well, there is data contradicting the conclusion based on the Kappesser et al study to the effect that the facial display of pain does differ from expression of other negative emotional states and that people routinely make the distinction.

The Kappesser reference has been removed and some discussion regarding the facial expressions of pain added as follows:

However, facial expressions may be an important indicator of pain, with evidence that prototypical facial expressions of pain are reliably identified by observers of another individual’s pain-related expressions, and that observers are able to discriminate between facial expressions associated with pain and those associated with other emotions such as fear (Simon et al 2008). In an experimental pain setting the facial responses of patients with dementia and those in the healthy control group were closely related to the intensity of the stimulation, leading to a conclusion that facial expression may be an important pain assessment tool in patients with impaired cognition or inability to self-report their pain experience (Kunz et al 2007). Facial changes associated with pain have been shown to be consistent across the lifespan (Prkachin 2009), and as the identification of facial cues does not require the establishment of base rate data or trends in behaviour this may be an important cue that can be assessed by paramedics in order to identify the presence of pain. In addition, this does not demand assessment over time as is required by some other behavioural cues.

Some criticism of the Abbey Pain Scale would be appropriate. For example, the account of facial expression could come closer to the empirically described facial display of pain. Frowning and looking frightened are non-noxious aversive states differentiable from pain.

This has been added to the discussion of the limitations of this scale.

Reviewer 2
It seems that only two systematic reviews met inclusion criteria but that other papers are reviewed/discussed in the discussion section. This needs to be clarified.

The paper has been modified to show that the initial search strategy needed to be broadened to enable practice recommendations for paramedics as an interim to further study that aims to trial tools for paramedic assessment of pain in cognitively impaired adults.

The difference between this review and a 'systematic review' as for example used by Cochrane needs to be clarified and perhaps different language used to reduce confusion.

The term “systematic review” has been replaced by terminology that describes a systematic literature review in order to avoid confusion with the methodology recommended by Cochrane.