Author’s response to reviews

**Title:** Development of an internet-delivered educational video for acute whiplash injuries

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Reviewer 1:

Background, line 64-69, reviewer comment:

Please could you explain in more detail the difference between extensive and intensive treatment – or use the same wording if they are in fact the same thing.

Response: The two words were intended to reflect the same thing. We agree with the reviewer that using different words can lead to a lack of clarity in the text. We have therefore changed the wording so the term "intensive" is used consistently (page 3, highlighted in yellow).

Methods, line 120, reviewer comments:

Why do participants have to be aged over 18? Is this decision based on medical grounds (is whiplash in younger patients treated differently) or simply a pragmatic choice to avoid the ethical implications of working with those under 18?

Response: From the outset, we specifically aimed to create a preventive intervention targeting adults. This aim was chosen since adults with prolonged pain and disability by far pose the largest and most costly group in terms of health care use and social welfare payments.

However, the scientific reason for specifically setting an 18-year age limit was based on the fact that most studies on whiplash injuries set an age requirement of 18 years of age. This means that the scientific evidence, on which our recommendations in the video are based, have been generated in studies only including persons above the age of 18. Currently, we do not know to
which extent knowledge based on studies of adults can be applied to children or youngsters below the age of 18. It was therefore found appropriate to uphold an age requirement of 18 years for our intervention.

Extending the age range to include children would also make it difficult to ensure that the information was understandable and that the level of complexity was suitable for all participants. Finally, there was also the pragmatic aspect to the decision mentioned by the reviewer. Including persons under the age of 18 in a later clinical trial testing the intervention would pose greater challenges in terms of ethical considerations and approval. For example, children would perhaps be required to watch the video with a parent/appropriate adult, greatly diminishing flexible use of the video. For clarification, we have added a short comment on the primary reason for the age criterion in the methods section (page 5, highlighted in yellow).

Methods, line 194, reviewer comment:

Why were the American and Canadian videos considered unsuitable for use in Denmark? Was this simply due to the language barrier, or were there other reasons why these were not so relevant to a Danish audience? It might help to be clearer that you are not re-inventing the wheel.

Response: We agree that it is not clarified in the current manuscript why it was not appropriate to reuse the two previous videos. The reasons for creating a new Danish video were three-fold: 1) We aimed to create a theory-driven intervention that would supplement and extend the face-to-face information about the injury that patients routinely receive from doctors in the emergency room. In order to achieve coherence between the standard care in the emergency room and our intervention it was important to use models and wording resembling what patients experience in the "real world". Both the American and Canadian videos relied on explanatory models for symptoms that are not routinely used in a Danish medical setting. Introducing concepts or models that Danish medical professionals would not present to patients could frustrate the sense of coherence and may even obstruct later communication with other health professionals in the Danish health care system. 2) The American and Canadian videos were created for different health care systems in a North American cultural setting. Even the simple fact that the physical surroundings in a hospital and the uniforms worn by professionals look different could distract viewers from paying proper attention to the information we aim to communicate. Furthermore, there are culturally based expectations as to the way information is typically presented in order to be credible. If material departs from these expectations it could create responses in viewers that do not promote the aim of the intervention and thus become a distraction. An example of this was that the style of the voice-over used in the American video was immediately perceived by Danish viewers as resembling commercials. In Denmark, this could impact on the credibility of the video as Danish authorities use a somewhat different style when presenting information to the public. 3) Using a foreign language to present medical information would lessen the
comprehensibility of the material for many Danes. Even with the use of subtitles there is an increased risk of information being overheard, misinterpreted or simply not understood. Furthermore, a reliance on subtitles would present a problem to participants with reading difficulties who would otherwise be able to participate if the information was presented in Danish. Finally, there is also the possibility that nuances could be lost in translation due to subtle differences between the English and Danish languages.

We have added a comment on why the American and Canadian videos were considered unsuitable in the methods section that will hopefully make the matter clearer to readers (page 8, highlighted in yellow).

Methods, line 202, reviewer comment:

Where there any challenges raised in providing video information rather than a patient being seen by a qualified clinician? Both in terms of safety (are people carrying out the exercises correctly), or from a more boundary work perspective of practitioners not wanting their role removed?

Response: The video was from the outset developed as an add-on to usual care in the emergency room. It was not intended as a stand-alone intervention or for use in a setting where the patient has not been seen by a qualified clinician. Moreover, the video was not intended to replace any further contact with health care professionals that the patient might consult following the visit to the emergency room. In this respect, the project did not impact on practitioner roles.

No safety concerns were raised during development, as the video was developed specifically for patients where it had been clearly verified by a qualified clinician that no serious injury had occurred. All exercises included were of such a gentle nature that no adverse effect would be expected, even if they were not carried out in the prescribed way. The primary goal of demonstrating exercises was to encourage participants to start moving the neck from an early stage following injury. There is no scientific evidence that specific neck movements within normal range can impede recovery. Even misinterpretation of instructions for the presented exercises would not lead to excessive movement beyond normal range.

We have added clarity concerning the intended use of the video in the methods section (page 5, highlighted in yellow). Furthermore, we have added a comment on the safety of exercises to the methods section (page 9, highlighted in yellow).

Methods, line 244, reviewer comment:
You explain in more detail in the discussion what you might have done differently to avoid having to re-record a lot of the dialogue etc, but it would be helpful to mention in the methods why it was not possible to record new material – was it just a matter of time/budget constraints?

Response: Primarily due to time and budget constraints, it was not possible to record new material. The staff experienced in video production warned us that recording new material would prove costly and time consuming because settings, seasons and participants had visually changed. For example, actors could have changed haircut, hair colour, glasses or other personal characteristics which would make it necessary to re-record large parts of the existing material. Furthermore, not all individuals would be available for recording again which would mean redoing larger parts of the material with a new actor. The visual coherence of the video is important as shifts in the visual appearance of people and places could create unnecessary distractions from the intended messages in the video. We have added clarification of this issue in the methods section (page 11, highlighted in yellow).

Discussion, reviewer comment:

It would be interesting for you to look forward slightly and discuss where you imagine patients viewing this video (if it would be in a hospital setting then where, and is there room space available in clinics to do this?) If participants are given a video to take home, are you planning future proof this by providing some form of online viewing/download, given that many people are moving away from owing DVD players.

Response: While we did initially examine whether it would be plausible to show the video on DVD in the emergency room, it quickly became clear that none of the Danish emergency departments had the physical space or the staff resources to make this a viable option for daily use. We therefore abandoned that idea and shifted our focus to online solutions without reliance on specific physical devices such as DVDs. Furthermore, we were aware of an increasing attention to the possibility of utilizing internet-based solutions to assist patients in navigating the hospital-based health care system. In that context, the project became a way to test the viability of providing patients with expansions to the standard care via the internet.

An internet-delivered video is in our view the simplest and most pragmatic solution that will make the intervention both relatively cheap to implement, provide fast and easy access and be independent of specific devices or places. If the patients are able to stream the video on the internet by any device set up for internet use (i.e. mobile phone, tablet, computer, smart TV), it gives fast and flexible access to the information we want to communicate. It means patients can watch the information in the waiting area of the hospital, on the commute home, at home or at work at their own discretion.
We agree that the question of how to implement an intervention such as educational videos is important in this context and should be included. We have added a section with our considerations concerning this topic in the discussion (page 18, changes are highlighted in yellow).

Reviewer 2 comment:

I was surprised to see that you did not include the "patient voice" at the inception of the video as part of the multidisciplinary team but I can see that you consulted members of the public at a later stage and amended the video accordingly.

Response: We concur with the reviewer that this is a point for critique. In retrospect, it would have been the best policy to include the patients' perspective at the earliest stage of the development process. Ideally, we should have undertaken a qualitative examination of what information the patients would prefer to get immediately following injury. This should, as the reviewer points to, be done at the inception of the project before filming was initiated. Otherwise, it would be recommendable to include patient representatives in the multidisciplinary development group.

Since we did not do this, the final product is perhaps reflective of the injury from a professional point of view. There is a possibility that this may not entirely correspond to the worries or expectancies of the targeted patients. Were we to engage in a similar project in the future, we would amend the development process along these lines. It can be added that since we embarked on this project, hospital policies have increasingly focused on including the patients' perspective in treatment, so this issue is more present in the minds of health professionals now than it was just a few years ago.

We have added a comment on taking a more patient participatory approach to the development of interventions in the discussion (page 16, highlighted in yellow).