Reviewer's report

Title: Prognostic factors of a favorable outcome following a supervised exercise program for soldiers with sub-acute and chronic low back pain

Version: 0 Date: 05 Sep 2017

Reviewer: Craig Denegar

Reviewer's report:
Thank you for the opportunity to review "Clinical variables predicting the success of a supervised exercise program for individuals with low back pain. While the authors are appropriately cautious regarding the use of the CPR derived in the conclusion I have a couple of concerns that I believe warrant attention.

1) the model may be a better predictor of failure than success. The presence of 3 or more (pain with lying, antidepressant use, FABQ>22.5, PT >5 or work restriction >6 mos) is 90+ sensitive. This is not surprising. Those with none of the above were more likely to succeed but it is quite possible that these patients would do well with most any regular exercise program.

2) were there differences in success based on baseline ODI?

3) at best, using the standard of Jaeschke R. et al the LR+ and LR- result in small shift in the probability of an outcome at the 4 predictor cut point.

4) the drop-out is a bit concerning. While deployment is understandable the 10% loss due to personal / unknown reasons again suggests that pain etc are predictors of failure. If the 11 were included in the analysis as failures, how would the model have changed?

Thus, I agree that more data are needed and that at some point a two-arm trial is needed to validate the model I think these results are a bit overstated without addressing the above issues.
I appreciate the individualized progression to the exercise regimen. However, it is a bit difficult to understand where patients began and finished in term of endurance, motion etc. Perhaps a summary table would help.

minor comments:

line 48 - exercises have effect, no effect sizes - revise Searle et al report small effect sizes in a SR of ..........

line 52 and 189 - don't divide patients, it's bloody (better to assign or classify into)

line 301 (lower LR-?)

I do not like the notion of "highly significant". This infers importance rather than probability.

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