Author's response to reviews

Title: Protocol for Determining the Diagnostic Validity of Physical Examination Maneuvers for Shoulder Pathology

Authors:

Lyndsay E Somerville (lyndsay.somerville@lhsc.on.ca)
Dianne M Bryant (dianne.bryant@uwo.ca)
Kevin Willits (kwillit@uwo.ca)
Andrew Johnson (ajohnson@uwo.ca)

Version: 3 Date: 22 October 2012

Author's response to reviews: see over
October 22, 2012

Please find the revisions to our manuscript entitled, “A Protocol for Determining the Diagnostic Validity of the Physical Examination Maneuvers for Shoulder Pathology” for consideration for publication in *BMC Musculoskeletal Disorders*. Please see the authors response to the reviewers concerns below.

Sincerely,

Dianne Bryant, M.Sc., Ph.D.

Clinical Epidemiologist
Associate Professor

School of Physical Therapy, Faculty of Health Sciences
Department of Surgery, Schulich School of Medicine & Dentistry
The University of Western Ontario

Department of Clinical Epidemiology & Biostatistics, Faculty of Medicine
McMaster University

Elborn College, Room 1438
The University of Western Ontario
1201 Western Road
London, ON, CA, N6G 1H1
Phone: 519-661-2111 x83947 or x34478
Fax: 519-661-3178
Email: dianne.bryant@uwo.ca
Authors’ Response

Comment: The guideline that was submitted was a CONSORT guideline instead of the STARD statement.
Response: The reporting details for this manuscript were guided by the STARD statement.

Comment: The reviewer suggests that both the systematic review and the Delphi process should be a separate manuscript.
Response: The systematic review was part of a Master’s thesis. We have provided the reference. This manuscript is currently submitted to Clinical Orthopaedics and Related Research. We have added a few more details the Delphi process including how tests were identified, participant selection, number of participants, expertise of participants and response rate for each round.

Comment: The reviewer felt that adding a flow diagram would improve the clarity of the design.
Response: We have added a figure.

Comment: The reviewer felt that the introduction was repetitive with the discussion.
Response: We feel that the Sackett classification is not widely known, represents a huge flaw in the current literature and therefore deserves repeating. In total, we are talking about one high-level paragraph in the background with a more detailed description of the problem throughout the discussion.

Comment: The reviewer wanted the results section removed.
Response: Done.

Comment: The reviewer suggested adding a reference for the 0.10 width of the 95%CI.
Response: A sample size calculation is an estimate and the parameters that are used to calculate the sample size are often arbitrary (e.g. Type I error 0.05 or power 0.80). There is no evidence to support the width of the boundary that we selected for the confidence intervals. Instead to improve transparency, we added, “This boundary was selected because the authors felt that if the uncertainty around the estimate of validity included the possibility of a sensitivity or specificity of less than 0.75 that the conclusions about the usefulness of the test change.”

Comment: The reviewer suggests that adding a correction factor for alpha spending is warranted or recognition of failure to do this should be recognized in the limitations section of the Discussion.
Response: We do not perform any statistical tests – only parameter estimations – thus, alpha spending is not a concern.

Comment: The reviewer suggests that the 2x2 tables will include patients without physical examination.
Response: This is incorrect. Each 2x2 table is constructed in the following manner. The overall N includes all patients for whom one of the possible diagnoses following history included that
diagnosis. Thus, for the 2x2 for rotator cuff tests, the total N included all patients suspected of having a rotator cuff disease – even if other diagnoses were more or less possible. All patients in the study underwent a physical exam. Thus, a complete 2x2 is possible for each test.

**Comment**: The reviewer wondered about the patients who underwent MRA.

**Response**: All patients underwent physical examination. All patients underwent a gold standard. For patients who underwent surgery the gold standard was surgery. For patient who did not have surgery, the gold standard was MRA.

**Comment**: The reviewer asked that we include citations to support the diagnostic accuracy of MRA – evidence that it is an appropriate and comparable gold standard.

**Response**: The following paragraph is included in the manuscript, “MRA was chosen as the reference standard over MRI due to its ability to diagnose disorders of the internal soft tissue structures such as the labrum. The literature has shown that MRI is not as accurate for diagnosing SLAP tears as MRA with reported sensitivities for MRI ranging from 43% - 75% [12-16] and specificities between 58% - 70% [13, 14, 16]. MRA has been shown to be highly sensitive and specific for detecting both rotator cuff pathology and labral injuries [17, 18]. In some cases patients will undergo both surgery and an MRA. For these cases we will calculate the agreement between these two standards to further justify the use of MRA as a second reference standard.”