Executive Summary

- There is still much controversy and debate around how to conceptualise, define, diagnose and manage malingering and symptom exaggeration.

- Multiple methods should be used to identify symptom exaggeration or malingering.
  - These methods should include the clinical interview, examination of medical records, special investigations, and symptom/performance validity tests (SVTs/PVTs).

- Despite endorsement of the use of SVTs/PVTs, there is no consensus or guidance on which tests should be used, at which point, and how they should be interpreted.

- Whilst it is widely accepted that SVTs/PVTs should be used to detect symptom exaggeration or malingering, they are not necessarily used in everyday medical practice.

- If using SVTs/PVTs for detection of symptom exaggeration and cognitive under-performance, more than one should be used to improve accuracy of results, and to avoid false positives.

- A negative score on an SVT/PVT should be used as a catalyst for further investigation.

- A number of limitations remain in the current understanding of SVT/PVT findings.

Summary

- Overall, the literature published since 2012 on symptom/performance validity is in line with the findings of the 2012 literature review.

- Symptom/performance validity remain difficult concepts to define, and the associated behaviours are challenging to both diagnose and manage.

- There is consensus that diagnosis should be made using a multi-method approach, and there is widespread endorsement of symptom validity tests (SVTs) and performance validity tests (PVTs).

- However, there is a lack of guidance around the specific use of these tests and how to interpret the results.
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Abbreviations

AACN  American Academy of Clinical Neuropsychology
APA  American Psychiatric Association
ASAPIL  Association for Scientific Advancement in Psychological Injury and Law
CVLT-FC  California Verbal Learning Test – Forced Choice
DSM  Diagnostic and Statistical Manual of Mental Disorders
FD  Factitious Disorder
FIT  Rey 15-Item Test
MMPI-2-RF  Minnesota Multiphasic Personality Inventory-2-Restructured Form
MPRD  Malingered Pain Related Disability
MSPQ  Modified Somatic Perception Questionnaire
MSVT  Medical Symptom Validity Test
NAN  National Academy of Neuropsychology
NSI  Neurobehavioural Symptom Inventory
PDI  Pain Disability Index
PDRT  Portland Digit Recognition Test
PVI  Performance validity indicator
PVT  Performance Validity Test
RDS  Reliable Digit Span
SIMS  Structured Inventory of Malingered Symptomatology
SVT  Symptom Validity Test
TOMM  Test of Memory Malingering
WAIS  Wechsler Adult Intelligence Scale
WCT  Word Choice Test
WMT  Word Memory Test
1 Background

This document is an update to the symptom validity literature review undertaken in 2012. It is intended to provide a summary of the most recently published articles as an addition to the original 2012 report. It is likely that this will contribute to the production of a ‘best practice’ symptom/performance validity assessment guide for mental health providers/suppliers.

The focus of the literature review produced in 2012 was to review the literature on the assessment of symptom validity of cognitive, pain, and emotional complaints in people with traumatic brain injury, chronic pain conditions, and mental injury. Topics covered included: reasons for symptom validity testing, when to use tools and in which context, the risks of testing and consequences of getting it wrong, and ways of managing clients after identifying symptom exaggeration.

Overall the literature published on symptom/performance validity since 2012 is limited as it is made up of primary studies which focus on symptom or performance validity tests. The findings of this updated summary of the literature demonstrate that more recently published articles are predominantly in line with the findings of the literature review published in 2012.

1.1 Symptom/performance validity

Symptom validity refers to the accuracy of a person’s behavioural presentation, self-reported symptoms, or performance validity in the context of neuropsychological tests.

Assessment of symptom validity includes measures of symptom reporting (over-endorsement), as well as measures of performance (cognitive underperformance). Symptom validity tests (SVTs) are used to determine the accuracy of symptom reporting, and performance validity tests (PVTs) aim to determine the accuracy of measures of actual ability. Appropriate use of SVTs and PVTs improves clinicians’ ability to reach valid conclusions on the credibility of reported impairments.

Symptom validity can manifest as symptom exaggeration, poor effort or performance, or malingering. These terms are described in more detail in the 2012 literature review. There is conceptual and assessment overlap between exaggeration, effort and malingering, as demonstrated in Figure 1 below (from the 2012 literature review).

Figure 1: the conceptual and assessment overlap between exaggeration, poor effort, and malingering (from the 2012 literature review, adapted from Iverson 2006)

1.1.1 Related terms

**Symptom exaggeration**, as defined in the 2012 report, refers to the conscious or unconscious tendency of a person to under-rate their abilities and/or to overstate their limitations and symptoms.

**Effort** refers to the level of cognitive and behavioural engagement in a task, and is associated with test performance.
**Malingering** denotes deliberate feigning or exaggeration of illness or injury, for the purpose of gain.\(^5\) The most common definition of malingering comes from the DSM (the definition did not change between DSM-IV and DSM-5), which states that the disorder involves “the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives, such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs.”\(^2\) Malingering is considered to be just one possible source of negative response bias,\(^4\) and is only one factor taken into consideration when investigating symptom validity.

1.1.2 *Debate around symptom/performance validity*

There is still considerable debate around the best way to define and manage symptom/performance validity. There is consensus that behaviours associated with symptom/performance validity are complex, multi-faceted and situation specific. It is generally accepted that the assessment of symptom/performance validity should involve multiple elements: clinical interview, medical records, special investigations, and symptom and performance validity tests. In particular, guidelines from professional psychology organisations tend to recommend the use of symptom and performance validity tests, but the clinical use of these tests is variable.

2 *Methods*

A search of the following sources was carried out between April and July 2016:

- Cochrane Library, Embase, Medline, and PsycInfo
- Google Scholar
- Websites of psychological associations or societies

Search terms included: symptom validity, malingering, malinger, symptom fabrication, symptom exaggeration, and malingered disability.

2.1.1 *Inclusion criteria*

This update followed the 2012 literature review, and thus no specific inclusion criteria were set.

Systematic reviews, literature reviews, and review articles were included, as well as position statements, guidelines, and primary studies focusing on symptom validity generally, or symptom or performance validity tests more specifically.

2.1.2 *Exclusion criteria*

- Articles not in English
- Articles published before 2012, or included in the 2012 literature review

2.2 *Outline*

The findings of this update are laid out under the following headings: conceptual and definitional findings; reasons and motivations to exaggerate; prevalence of symptom exaggeration; methods of assessing symptom validity; symptom validity tests; rationale for the use of symptom validity tests; providing feedback; and future research.
3 Findings

3.1 Conceptual and definitional findings

The definition of symptom validity remains in line with that reported in the 2012 report.

Likewise, the definitions of related concepts such as effort and malingering remain the same. As in 2012, there is still acknowledgement that the definition of malingering used in the DSM is not in line with current psychological knowledge.

Symptom validity is not a clinical state or categorical value, but is complex and multifaceted.

As previously stated, symptom validity refers to the accuracy of a person’s behavioural presentation, self-reported symptoms, or performance on neuropsychological tests. Abnormal healthcare-seeking behaviour covers a range of clinical and non-clinical behaviours, from exaggeration of symptoms to deliberate feigning. Definitions of symptom exaggeration, effort, and malingering are provided above in section 1.1.1.

As reported in the 2012 review, standard definitions of malingering in psychiatric classifications like the DSM have not kept up to date with conceptual and psychological advances in the area.

There is evidence that poor effort and exaggeration are not clinical states or categorical values, but are complex and influenced by a multitude of factors that can be unique to the individual. The behaviours are situation specific, influenced by interactions with medical, social or legal professionals, as well as the injury itself, and are shaped by common psychological reactions that are a part of normal human behaviour. These concepts are further explained in section 3.2 below.

<table>
<thead>
<tr>
<th>Study</th>
<th>Type of study</th>
<th>Main findings</th>
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| Bass and Halligan, 2014 | Literature review | • In the context of SVTs, “symptom validity refers to the accuracy or veracity of a person’s behavioural presentation, self-reported symptoms, or performance on neuropsychological tests”  
• “controversy and debate continue about the best way to frame, explain, and manage” malingering and factitious disorders  
• The authors propose that the standard use of terms such as malingering and factitious disorders in psychiatric classifications such as the DSM has not kept up to date with conceptual and psychological advances in the area  
• The authors advocate adopting a model of illness wider than the traditional biomedical model, which focuses on “the person and not the disorder as central to defining health and ill health” |
| Greve et al, 2013 | Review article | • “Malingering is an act of will and its specific manifestation depends on the idiosyncrasies of the individual case, including the claimant’s beliefs regarding the effects of their injury and efforts to avoid detection” |
| Silver, 2012     | Review article | • “Poor effort and exaggeration are not categorical values, but are complex and multi-determined and have a differential diagnosis of their own. Some factors are intrinsic to the circumstances of the injury or the evaluation process. Others are well-described phenomena that are ubiquitous, and found in common human relationships and reactions”  
• “the conceptualisation of adequate effort, symptom exaggeration and malingering has been oversimplified and underanalysed, and ignores common psychological reactions found in normal subjects. Suboptimal effort and symptom magnification may not be conscious processes but stem from well described and validated findings in social psychology and behavioural economics” |
| Sellbom et al, 2012 | Primary study | • “The American Psychiatric Association conceptualizes the intentional production of physical and psychiatric symptoms as malingering, whereas in somatoform disorder, the individual unconsciously expresses somatic complaints in an effort to manage stress or reduce conflict” |
| Chafetz et al, 2015 | Position statement (AACN) | • “Malingering is the deliberate feigning or exaggeration of illness or injury for the purpose of gain (e.g., compensation or avoidance of duty/punishment)” |
3.2 Reasons and motivation to exaggerate

The literature published on symptom/performance validity since 2012 does not comprehensively address reasons and motivation to exaggerate, but this section is comprehensively covered in the 2012 literature review. There are a number of reasons and motivations as to why people exaggerate or fabricate their symptoms and problems, and it is important to recognise that clients may not intentionally do so. Furthermore, motivation may stem from phenomena that are common in human reactions and behaviours.

Conceptual and definitional considerations around symptom/performance validity recognise that some elements of poor effort and exaggeration are linked to the circumstances of the injury, or to the context in which assessment takes place.7, 8

In their guidelines on psychometric tests, the New Zealand Psychologists Board recognises that clients may have no intention to deceive and relay information in good faith, but can become particularly focused on their difficulties, can incorrectly attribute pre-existing symptoms to an accident, report an inaccurate pre-morbid level of functioning, catastrophise current symptoms, or have difficulty reporting their functioning accurately.3

It is important to recognise that motivation for exaggeration may stem from phenomena that are common in human reactions, and can be described using findings from social psychology and behavioural economics.8 A number of factors that fall within the range of normal behaviour are important in the context of invalid symptom reporting, including pre-injury traits and beliefs, factors at the time of initial treatment, and thoughts and feelings during evaluations.10 Furthermore, deliberate or tactical deception is prolific in human social interactions, with some researchers suggesting that human brains are innately primed to deceive.2

### 3.3 Prevalence of symptom exaggeration

In line with the 2012 report, estimates of the prevalence of symptom exaggeration vary between studies. Studies published since 2012 report prevalence to be between 25 and 45 percent.

Estimates of the prevalence of symptom exaggeration vary between studies. A recent review reported that the prevalence of symptom exaggeration in social security disability examinations in the US is estimated to be between 46 and 60 percent.2 The same review reported rates of symptom exaggeration from the American Board of Clinical Neuropsychology: in 29% of personal injury cases, 30% of disability or workers compensation referrals, in 19% of criminal cases, and in 8% of medical or psychiatric cases.2 Symptom exaggeration is most prevalent in compensation or litigation settings but, importantly, most compensation claimants (75-90%) respond well to treatment, recover from illness or injury, and return to work.2

<table>
<thead>
<tr>
<th>Study</th>
<th>Type of study</th>
<th>Main findings</th>
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<tbody>
<tr>
<td>Dandachi-FitzGerald et al, 2013</td>
<td>Survey</td>
<td>Widely acknowledged that non-credible symptoms are reasonably prevalent, with estimates of the prevalence of non-credible symptoms ranging between 25% and 45%, depending on the context (e.g. criminal vs civil litigation), the samples studied and the SVTs used</td>
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<tr>
<td>Tsushima et al, 2011</td>
<td>Primary study</td>
<td>Authors cite a survey of clinical neuropsychologists which suggests that 29% of personal injury cases and 30% of disability claims involve probable malingering and symptom exaggeration11</td>
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<tr>
<td>Bass and Halligan, 2014</td>
<td>Literature review</td>
<td>Social security disability examinations in the US: prevalence of symptom exaggeration has been estimated to be between 46 and 60%, using symptom validity tests Members of the American Board of Clinical Neuropsychology reported rates of symptom exaggeration in 29% of cases of personal injury, in 30% of disability or workers compensation referrals, in 19% of criminal cases, and in 8% of medical or psychiatric cases o Categorised by diagnosis: 39% for mild head injury, 35% for fibromyalgia and chronic fatigue, 31% for chronic pain, 15% for depressive disorders, and 11% for dissociative disorders Symptom exaggeration is most prevalent in compensation or litigation settings, but most compensation claimants (75-90%) respond well to treatment, recover from illness or injury, and return to work</td>
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3.4 Methods of assessing symptom/performance validity

As in the 2012 report, the literature included in this update endorses the use of information from a variety of sources when assessing for symptom validity.

These sources include: clinical interview, medical records, any necessary special investigations, behavioural observations, and symptom and performance validity tests.

A number of studies included in this update state the need for multiple sources of evidence to form a conclusion on poor effort, exaggeration, misreporting of symptoms, or malingering. These sources should include the clinical interview, medical records, any necessary special investigations, behavioural observations, and symptom and performance validity tests. Other factors that can be taken into consideration when assessing symptom/performance validity are external incentives, evidence from sources such as self-reports and behavioural observations, and inconsistencies between test results and observed or reported behaviour. This supports the findings of the 2012 report, which stated that assessment of symptom validity requires the integration of information from a variety of sources.

One study surveyed neuropsychologists in Western Europe, and showed that, whilst these professionals had technical knowledge of symptom validity, a number continued to rely on outdated notions of assessment. Another study stated that many clinicians in the UK still rely on clinical judgement to assess performance validity. A position statement from the American Academy of Clinical Neuropsychology (AACN) notes that clinicians often fail to detect malingering, and research shows that they are prone to biases in judgement if they do not use established tools to guide their judgement.

Another study noted the absence of objective and measurable methods to systematically diagnose malingering, highlighting the shortcomings that still remain in methods of assessing symptom/performance validity.

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| Bass and Halligan, 2014    | Literature review               | • A diagnosis of malingering requires multiple sources of evidence  
|                            |                                | • “Although psychometric investigations (eg, symptom validity testing) can inform the detection of illness deception, such tests need support from converging evidence sources, including detailed interview assessments, medical notes, and relevant non-medical investigations.”  
|                            |                                | • The authors state that the clinical interview is the cornerstone for the detection of malingering  
| Schroeder et al, 2012      | Systematic review and cross-  | • A formal diagnosis of malingering should not only be based on SVT failures, and should take a number of factors into consideration  
|                            | validation study                | o A substantial external incentive should be present for a diagnosis of malingering  
|                            |                                | o Psychiatric, neurological or developmental factors should not fully account for SVT failures  
|                            |                                | o Factors other than malingering can cause a patient to fail two or more SVTs, e.g. fatigue, a desire to end testing  
|                            |                                | o Regardless of SVT results, evidence from other sources, such as self-reports and behavioural observations, can be suggestive of suspect effort  
|                            |                                | o “Inconsistencies between neuropsychological test data and known patterns of brain functioning, observed behavior, reliable collateral reports, or documented background history may also suggest suspect effort”  
| Suesse et al, 2015         | Clinical series                | • The significant majority of performance validity tests (PVTs) “are valuable and reliable tools for identifying suboptimal performance validity on neuropsychological tests” and the authors “strongly endorse the flexible and expert use of these tests”  
|                            |                                | • Many clinicians in the UK still rely on clinical judgement to assess performance validity  
| Dandachi-FitzGerald et al, | Survey                         | • The neuropsychologists surveyed demonstrated technical knowledge of symptom validity, but a number of respondents continued to rely on outdated notions (e.g. that clinicians can determine symptom validity using intuitive judgement)  
| 2013                       |                                | • There is a gap between the acknowledgement that SVTs should be used in every forensic assessment, and the actual practices of neuropsychologists in Western Europe  

3.5 Symptom/performance validity tests

As with the 2012 literature review, the literature published since 2012 predominantly agrees that multiple SVTs/PVTs should be used in the assessment of symptom/performance validity.

The development, testing, and validation of SVTs/PVTs has contributed to a large proportion of the literature published on symptom/performance validity more recently. However there are still a number of limitations associated with their use. Namely, there are a large number of measures available but no substantiated guidelines or consensus on which SVTs/PVTs should be used, when they should be used, how many, and how they should be interpreted.

SVT/PVT research is currently a dominant theme within neuropsychological assessment.® Symptom and performance validity testing can be used to address concerns around exaggeration of symptoms and underperformance in psychometric testing.® These tests have been specifically designed to be very easy, and performance should not easily be influenced by other factors.® Guidelines in both the US and the UK endorse the use of symptom and performance validity testing.®

As in the 2012 report, there is general consensus that multiple SVTs should be used in the assessment of symptom validity in order to improve accuracy and correct diagnosis, and to avoid false positives.®

In New Zealand, psychologists’ opinions on the routine inclusion of symptom validity tests are divided, with some advocating that it is best practice to include these tests as a routine part of clinical assessment of cognitive function, especially if clients are involved in litigation or claiming financial benefits for disability.®

Despite widespread endorsement of SVTs/PVTs, there are a number of limitations associated with their use, and acknowledgement that significant research still needs to be carried out in this area. Firstly, it is important to recognise that a formal diagnosis of malingering should not be based only on SVT/PVT failures, and that factors other than malingering, such as fatigue or a desire to end testing, can cause a patient to fail these tests.®
Secondly, the literature shows that varying cut scores are used with SVTs/PVTs, and new cut-scores are tested regularly. One review highlighted the issues with rigidity of cut-scores, stating that cut-scores entail judgement, can result in misclassification, impose artificial pass/fail dichotomies, and that no true cut-scores actually exist. Furthermore, there is no consensus on which SVTs/PVTs should be used, when they should be used, how many, and how they should be interpreted. Lastly, some professionals note that time constraints can prohibit or limit the use of SVTs/PVTs.

### Study Results Table

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<tr>
<th>Study</th>
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<th>Main findings</th>
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| Bigler, 2014                 | Review article         | • "Although recommendations from professional neuropsychological organisations endorse the use of external SVT measures, there is no agreement on which ones should be used for which condition, the timing of when SVT measures should be administered in the context of other tests, how many and what guidelines should be used for interpretation [...]"6  
  • Cut-scores on SVTs \((a)\) always entail judgement, \((b)\) inherently result in some misclassification, \((c)\) impose artificial ‘pass/fail’ dichotomies and \((d)\) no ‘true’ cut-scores exist6  
  • This review “demonstrates the problems with rigidity in interpretation with established cut-scores. A better understanding of how certain types of neurological, neuropsychiatric and/or even test conditions may affect SVT performance is needed”6  
  • Limitations of SVTs: time required to administer tests, relationships between SVTs, test re-test reliability, lack of consensus on administration of tests |
| Bigler, 2012                 | Dialogue (short review)| • Significantly more research is needed on SVTs  
  • SVT findings can elicit important information about neuropsychological test performance, but oversimplification of test behaviours can lead to clinically significant errors |
| Greve et al, 2013            | Review article         | • Given the variability in the presentation of malingering, it is unreasonable to expect any particular SVT to have perfect sensitivity of malingering cases  
  • Combination of SVTs – a comprehensive assessment of performance validity and symptom exaggeration increases the likelihood that a patient’s malingering status has been clearly and correctly characterised |
| van Impelen et al, 2014      | Systematic review and meta-analysis | • SVTs should possess the following qualities: be able to accurately differentiate between honest respondents and people who are known to feign their symptoms; sensitive to differential preference, insensitive to genuine psychopathology; robustness against coaching  
  • “Assessment of symptom validity should ideally include multiple SVTs, and preferably SVTs that are independent (i.e., correlate weakly with each other[...]”22 |
| Whitney et al, 2013          | Primary study          | • Although the authors agree that “the use of at least two well-validated symptom validity tests, along with behavioural and collateral data, should be used as a core element of neuropsychological assessment of individuals for whom secondary gain may be a factor, it remains unclear as to which symptom validity test results should be given priority when results differ among them”21 |
| Dandachi-FitzGerald et al, 2013 | Survey                | • The Test of Memory Malingering (TOMM), the Rey 15-Item Test (FIT), and the Word Memory Test (WMT) among the most widely-used stand-alone SVTs |
| Chafetz et al, 2015          | Position statement (AACN) | • Current guidelines state that PVTs (both dedicated and embedded measures) should be interspersed throughout a neurocognitive exam |
| Carone, 2015                 | Literature review      | • Symptom and performance validity assessment an essential component of neuropsychological evaluations23 |
| Berthelson et al, 2013       | Meta-analysis          | • This study concluded that false positive rates for effort tests significantly increase as the number of indicators administered is increased24 |
| Bashem, Rapport et al, 2014  | Primary study          | • Results from evaluations in this study showed that diagnostic accuracy only improved little to modestly when the number of tests was increased beyond two25 |
| Bianchini, Aguerrevere et al, 2014 | Primary study        | • Results showed that MSPQ and PDI scores were not associated with objective medical pathology, but that they accurately differentiated non-MPRD from MPRD cases. High scores on these tests indicate an increased likelihood of malingering, but they are insufficient for a diagnosis of MPRD no matter how extreme19 |
| Rogers, Gillard              | Primary                | • The authors acknowledge the difficulties associated with rigid cut scores; scores very |

ACC Research: Literature Review Update
3.6 Rationale for the use of symptom/performance validity tests

With regard to the rationale for the use of symptom validity tests, the literature published since 2012 is in agreement with the findings of the 2012 literature review.

As previously, the literature shows that clinicians’ ability to detect symptom exaggeration is limited, and that this group tends to overestimate their ability to accurately do so. Thus, SVTs/PVTs provide an empirical and validated method for assessing the validity of symptoms and test performance.

It is recognised that clinicians tend to overestimate their abilities at detecting exaggeration, poor effort or malingering and that, due to the prevalence of non-credible symptom reporting, there is a need for systematic determination of symptom/performance validity, using well-calibrated and robust tools.

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<tr>
<th>Study</th>
<th>Type of study</th>
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| Davis et al, 2011 | Primary study | “The benefits of utilizing embedded performance validity indicators (PVIs) include efficiency (i.e., no need for administration of additional tests) and, in medicolegal contexts, resiliency to coaching. Additionally, utilization of a number of embedded measures scattered throughout the neuropsychological evaluation allows for sampling a broader range of behaviour across a larger time interval, which may be beneficial since effort is not a constant”
| Dandachi-FitzGerald et al, 2013 | Survey | As previously documented for clinicians, neuropsychologists overestimate their own abilities at detecting malingering. High estimates of non-credible symptom reporting emphasise the need for systematic determination of the validity of obtained diagnostic data in neuropsychological assessments. Comparable with findings from earlier studies, there is a discrepancy between the acknowledgement of the prevalence of non-credible symptom reporting and the use of objective detection methods.
| Greve et al, 2013 | Review article | Malingering and validity need to be assessed comprehensively with well-calibrated tools; this will increase the likelihood of detecting true malingering, and avoiding false determinations.
| Chafetz et al, 2015 | Position statement (AACN) | SVTs/PVTs are useful for the empirical evaluation of probable intent to over-report pain and related functional limitations, as motivated by secondary gain factors.

3.7 Providing feedback

There is limited material on providing feedback in the symptom validity literature published since 2012.

Some recent literature highlights the lack of consensus on the best way to provide feedback to patients who fail SVTs/PVTs, whilst other literature is in line with the guidelines and models outlined in the 2012 report. Ideally, a feedback model should involve establishment of rapport, exploration and establishment of the reasons for poor effort or disengagement, and discussion of underlying factors.²

Two studies highlight the lack of consensus amongst neuropsychologists on the best way to provide feedback to patients who fail validity tests.⁶, ¹⁷ Another described an established feedback model which involves establishing rapport with the patient, exploration of the reasons for poor effort and acknowledgement of possible task
disengagement, establishment of potential reasons for exaggeration, and discussion of factors that may underlie symptom persistence.2

<table>
<thead>
<tr>
<th>Study</th>
<th>Type of study</th>
<th>Main findings</th>
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<tbody>
<tr>
<td>Bass and Halligan, 2014</td>
<td>Literature review</td>
<td>• A feedback model has been described which involves establishing rapport with the patient, exploration of the reasons for poor effort and acknowledgement of possible task disengagement, establishment of potential reasons for exaggeration, and discussion of other factors that may underlie symptom persistence.</td>
</tr>
<tr>
<td>Bigler, 2014</td>
<td>Review article</td>
<td>• Lack of agreement amongst neuropsychologists on how best to provide feedback to patients who fail SVTs.</td>
</tr>
<tr>
<td>Dandachi-FitzGerald et al, 2013</td>
<td>Survey</td>
<td>• Amongst neuropsychologists, there is little consensus on how to deal with test failure.</td>
</tr>
<tr>
<td>Bush et al, 2014</td>
<td>Position statement (ASAPIL)</td>
<td>• “When faced with invalid results and considering making determinations of malingering, it is advisable to use probabilistic language or a term such as feigning that make no assumptions regarding examinee goals which underlie the production of invalid results.”</td>
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3.8 Future research

Some of the articles included in this update highlight the need for more research in the field of symptom/performance validity. A large amount of research needs to be done to calibrate symptom/performance validity tests for chronic pain and physical effort measures. More generally, given that there is still controversy and debate around symptom/performance validity, further work needs to be completed on conceptual issues.

<table>
<thead>
<tr>
<th>Study</th>
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<th>Statements/recommendations</th>
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<tbody>
<tr>
<td>Dandachi-FitzGerald et al, 2013</td>
<td>Survey</td>
<td>• Scientific progress in the field of symptom validity should encompass improvements to techniques used to detect non-credible symptoms, as well as to conceptual issues to provide meaning to non-credible symptoms or to determine the best way to provide feedback and treatment advice to patients who present a negative response bias in an examination.</td>
</tr>
<tr>
<td>Bigler, 2014</td>
<td>Review article</td>
<td>• “Advances in neuroimaging techniques may be key in better understanding the meaning of border zone SVT failure. The review demonstrates the problems with rigidity in interpretation with established cut-scores. A better understanding of how certain types of neurological, neuropsychiatric and/or even test conditions may affect SVT performance is needed.”</td>
</tr>
<tr>
<td>Greve et al, 2013</td>
<td>Review article</td>
<td>• A substantial amount of work remains to be done on the calibration of SVTs in chronic pain, and physical effort measures</td>
</tr>
<tr>
<td>Whitney et al, 2013</td>
<td>Primary study</td>
<td>• Future research should explore the links between independent cognitive symptom validity tests, and embedded indicators of negative response bias</td>
</tr>
<tr>
<td>Silver 2015</td>
<td>Review article</td>
<td>• More research is needed on the relative effects on performance of factors that fall within the realms of normal human behaviour, in comparison to “not trying”</td>
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4 Summary

Despite being topical in the psychological literature, symptom/performance validity remains difficult to define, diagnose and manage. There is agreement that behaviours associated with symptom/performance validity are complex, multi-faceted and situation specific.

Guidelines from psychology associations tend to recommend the use of symptom/performance validity tests. Despite this endorsement, the clinical use of these tests is variable, and there is no consensus on which SVTs/PVTs should be used, when they should be used, how many, and how they should be interpreted.

Generally, it is accepted that the assessment of symptom/performance validity should involve multiple elements: clinical interview, medical records, special investigations, and SVTs/PVTs.

The literature suggests that there remains a substantial amount of work to be done in this area, especially on techniques used to detect non-credible symptoms, and on conceptual issues.

- Overall, this update finds that the literature published since 2012 on symptom validity is in line with the findings of the 2012 literature review.

- Symptom/performance validity remains a difficult concept to define, and the associated behaviours are challenging to both diagnose and manage.
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