New Zealand
PSYCHOLOGISTS BOARD
Te Poari Kaimātai Hinengaro
o Aotearoa

Guidelines on Using Psychometric Tests

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The purpose of the Board's "best-practice" guidelines

Practice guidelines recommend specific professional conduct for psychologists to follow. Guidelines are recommendations rather than mandatory standards and supplement the Code of Ethics (the **Code**).

The Code helps practitioners and the public understand the expectations placed on psychologists. It describes how psychologists should carry out their practice consistent with the ethical principles of

- the dignity of persons
- responsible caring
- integrity in relationships
- responsibility to society.

The guidelines adopted by the Psychologists Board (the **Board**) cover specific aspects of professional behaviour to support psychologists in providing competent and ethical practice.

The Board expects psychologists to be familiar with any Board guidelines relevant to each area in which they practise. The guidelines help to define competent and skilled professional behaviour. Although psychologists are not legally required to adhere to the guidelines, a disciplinary body may use the guidelines when evaluating a psychologist's knowledge and competency.

Objectives and limitations of the "Psychometric" Guidelines

These guidelines offer guidance and best practice suggestions to support psychologists to uphold high ethical and professional standards when using psychometric tests.

Limitations:

- The Board prepared these guidelines after consultation with experts throughout the psychology community in New Zealand. The consultation process found differing opinions in the profession about some aspects of psychometric testing practice.
- These guidelines do not provide detailed procedures for psychologists to follow when using psychometrics. Instead, they focus on the ethical and professional considerations psychologists should apply to all types of psychometrics.
- The Board does not intend for these guidelines to be used as training material for psychologists or practitioners from other disciplines.
- Practitioners from outside the psychology profession may use psychometric testing. The Board has no control over this, but psychologists can offer leadership and expertise, and influence others towards good practice.

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Executive Summary

Psychometric tests are structured and standardised assessment procedures used by psychologists to measure aspects of a client's functioning.

These guidelines cover the use of standardised tests by psychologists during their work with individual clients. Psychometric tests vary in the degree of formality between structured observations, such as questionnaires, to prescribed tasks which are administered under carefully controlled standardised conditions.

A standardised approach allows psychologists to compare a client with others who have completed the same assessment procedure. Psychologists can consider the test outcome to be a valid measure of that aspect of the client's functioning, so long as the test was developed on a population with similar characteristics, such as age, language or ethnicity, to the client.

The sections in these guidelines provide a detailed look at various topics relating to psychometrics. They often represent a range of opinions or issues. The Board has chosen to include some of the more straightforward-looking content because related issues, complaints, or competence concerns have been raised in the past.

The content includes matters for psychologists to consider, but the Board does not intend it to be prescriptive or define precisely how a practitioner should act. Instead, psychologists must use their professional judgement in the context of clients' particular circumstances to decide how to proceed.

Principles of use

The use of psychometrics should ordinarily comply with the following principles. In exceptional circumstances, deviation from these principles may be justified. However, if a complaint or competence concern arises, the Board would test whether the psychologist followed these principles.

Principle 1: Using the information

Psychologists should not usually consider information derived from psychometric testing an adequate assessment on its own. Instead, the information should be collated with data from other sources for the evaluation. Consistent information from different tests and sources strengthens confidence in the test findings. Inconsistent results will require more interpretation or enquiry. Psychologists should take care not to place too much

weight on the psychometric findings unless there is evidence that the test is valid in the particular situation.

Principle 2: Competence to use that test

Psychologists should ensure that they are competent and trained to use a test before using it with a client. The amount of training they require will depend on the sophistication of the test. It should be sufficient to ensure that standardised administration is followed so that the results of the test are valid and a well-informed interpretation of results can be made

Principle 3: Informed consent

Psychologists should obtain written, Informed consent from the client before any psychometric testing. The consent should include who has the right to receive this information. This is particularly important where someone other than the client will be given the results.

Principle 4: Justification for the test selection

Psychologists should be able to justify the selection of tests they use. This may mean identifying which aspect of the referral can be assessed using psychometric tests. Tests selected should be fit for the purpose required.

Principle 5: Interpretation and the limitations of test information

Psychologists have an ethical obligation to ensure that information arising from psychometric testing is not misused. Therefore they must carefully interpret the testand define the limitations of that information.

Principle 6: Avoiding over-testing

Testing should not be any more frequent or intrusive than necessary to gain the required information. Over-testing can lead to misleading results due to practice effects.

Principle 7: Follow administration instructions

The psychologist should use the prescribed and standardised procedures to administer a test so that they can compare the client's performance with others tested in the same way. Deviations from standard conditions should be stated as constraints on the interpretation of the results.

Principle 8: Third-party observer

Standardised administration of tests means a psychologist should not allow a third-party observer to be present during testing. However, two sets of circumstances may override this standard.

The Health and Disability Commissioner's Code of Patient Rights grants a client the right to have a support person present, should they request it. A psychologist should explain to the client how this may reduce the validity of the test results. If the client insists, the psychologist may choose to agree to this and work to minimise the disruption, or may decline to proceed with the assessment.

A support person may also be necessary when an interpreter is needed or if the client requires emotional or physical assistance.

Psychologists should use their judgement when deciding whether to allow a third-party observer. They should only do so when it is in the clients best interests, and they should include in the test report any effect this may have had on the results. As far as possible they should minimise the observer's access to the test materials

Principle 9: Cultural safety

Psychologists should ensure that the reported test results refer to any testing bias caused by cultural differences between the client and normative sample used in the testing. This is necessary because populations from different cultures may have systematically different test profiles. Psychometric tools used in New Zealand commonly use normative samples from other countries.

Principle 10: Release of psychometric data

Psychologists should only give the interpreted results of testing to those who have a legitimate right to receive that information. Interpreted results take into account any constraints on the validity of the test results and reflect other information and observations.

They should not give raw data from testing to anyone who is not trained to interpret it and only to those who are consented to have access. A client who requests the release of their test records may elect a psychologist who can receive the raw data on their behalf to assist in any interpretation of the results.

Principle 11: Reporting results

Reported results of testing should be fit for the purpose and targeted at the objectives of the assessment. In both written and oral feedback, psychologists should communicate any limitations of the assessment and present the results in a form that is understandable to the audience.

Principle 12: Decision-making criteria

The more serious the consequences arising from an assessment, the more stringent any decision-making criteria need to be. Psychologists should consider other interpretations or diagnoses and avoid any bias or prejudgement.

Principle 13: Assessing for a third-party

When a psychologist assesses an individual for a third-party, they have an independent expert role. They should take care not to be influenced by the contracting organisation to produce or confirm a preconceived result.

When assessing for a third-party, the psychologist is not an advocate for the client. The consent process should clearly state who the report belongs to and who can receive the information. Psychologists should ensure that the person they are testing understands the possible outcomes of the test results as well as what might happen if they decide not to take part in the assessment.

Principle 14: Confidential storage of test data

Psychometric test data should be stored securely and confidentially. The test data should not be accessible to people who are not trained to interpret it and should be viewed only by people with client consent. The Health (Retention of Information) Code requires that psychometric data, including raw data, must be kept for at least ten years from the latest time that a client was seen.

Principle 15: Security of psychometric tools

Psychometric testing tools and their contents should be protected from unauthorised access to preserve copyright restrictions and to avoid misuse of the tests. The Board acknowledges that this intention may be compromised by the large amount of information about psychometrics in the public domain, especially on the internet.

Principle 16: Use of psychometrics by those in training

People under training should be closely supervised when using psychometric tools. The consent gaining process should clearly state the status of the trainee and that the supervising psychologist is accountable. The psychologist in charge must ensure that standards are not compromised.

Timelines for review

The Board will review these guidelines every two years because psychometric testing is continually evolving.

Psychologists should contact the Board if they observe that aspects of these guidelines have become outmoded or no longer reflect current "best practice".

What is meant by "a psychometric test"?

A psychometric test is a structured and standardised measurement of cognitive, behavioural or emotional functioning including (but not restricted to) performance tasks, structured behaviour samples, self-report inventories or checklists, test record forms, or other materials used in the evaluation of an individual or a group of individuals.

A psychometric test is usually designed to be administered under carefully controlled or standardised conditions that include systematic scoring methods. Psychologists can compare the results to a larger population to help form an opinion about the individual. Psychometric tests may also allow individuals to be classified or placed within a range of possible measures.

Psychologists use psychometrics in a wide range of settings to help them understand and predict behaviour, then use this information to make decisions and guide future action. For example, in a workplace setting, the psychometrics may assist employers in selecting employees or deciding on what development employees need within an organisation. An employer can also use testing to help make educational evaluations and decide on resource allocation.

Psychologists can use psychometrics in a clinical setting, for a wide range of purposes including diagnosis, clinical decision-making and prognosis. Neuropsychologists provide expert assessments using psychometrics to diagnose and assess functionality when a client might have a brain dysfunction or neurological disorder.

Psychologists usually use tests to supplement other information gathered, rather than using psychometrics as the only source of information.

Standardised tests help psychologists add structured information to the information gained from other sources such as interview and observation.

Carefully selected psychometric tools may help to

- identify aptitudes and abilities
- inform a diagnosis
- predict performance on correlated real-life tasks.

Safe and ethical use of psychometric assessment procedures

Relevant expertise

Psychologists must only use tests that they know how to use and interpret. Otherwise, they will need to be closely supervised. They must comply with the requirements specified by the test's producers. The training required will vary depending on the complexity of the test.

Informed consent

The psychologist should gain informed consent from the client before undertaking the assessment and only report the results to those who have a right to know and have the client's permission. This is discussed more fully in a later section.

Accountable reporting

Psychologists are accountable for the contents their reports. They must select appropriate tests for the objectives of the assessment and should be able to justify the selection and interpretation of the tests if required.

A structured and controlled environment

Psychometric testing should take place in a structured and controlled environment. It is not appropriate for the psychologist to give the client the test to take away to complete elsewhere. Such uncontrolled administration would risk the client getting help to complete the test and reduce the security of the results. Also, the testing process may cause reactions in some clients, which the psychologist needs to observe and address. The testing environment should be free from distractions and set up to support optimal test performance.

Careful choice of which test to use

Some psychometric tests are better than others. A psychometric test should be:

- Valid: the evidence and theory should support the interpretations and relevance of test scores in the proposed use of the test.
- Reliable: the measurement results need to be consistent when the testing procedure is repeated on a population of individuals or groups.
- Sensitive: the results can identify differences in the attributes of interest[1].

[1] Refer to Eatwell, J. and Wilson, I. (2007) for a full discussion of the psychometric qualities of tests.

Natural variability in results

Psychologists can assume that individuals exhibit some degree of stability in their behaviour and the attributes during tests. However, repeated measurements will show some variability which a psychologist can consider as measurement error around a hypothetical "true" score.

Testing measurement errors

Errors in measuring tests sometimes occur. These errors can be random and unpredictable or potentially systematic. For example, a client with high test-anxiety may systematically underperform, introducing a construct-irrelevant variance.

Psychologists should be able to distinguish between measurement error which arises within a client from those arising from external factors, such as changes in how the test is conducted, or unintended distractions.

When a psychologist repeats assessments of a client, a change in score from one occasion to another could be an error, or it could arise from an intervention, or healing, or another process.

Confidence levels

Psychologists should include in their reports the level of confidence they place on the test outcome, as it is essential to an interpretation of a test result[2]. A high error rate in measurement reduces the validity of the measures.

Relevant normative populations

The most rigorous tests are the ones that the designers have shown to be valid when tested against a large normative population relevant to the test subject. Psychologists in New Zealand have to take into account that there are few tests which have been developed and validated against New Zealand populations.

Interpreting test results

The type of measure[3] used in a test determines the comparisons that a psychologist can make. The type of questionnaire will determine the nature of the information generated, ranging from structured interview data to classification into categories.

[2] AERA, APA, National Council on Measurement in Education (1999)
[3] O'Connor, F. (1993)

Percentile scores or ratings show an ordering rank that indicates how that individual has scored compared to the comparison group, and are generally easily understood by laypeople. However, percentiles should not be considered equal units of measurement as the ordering will tend to exaggerate differences near the mean and may collapse differences at the extreme.

Standard scores or interval scale systems of reporting results will show the individual's performance relative to the normal distribution. Raw scores cannot be compared directly with those of others. So, scores are transformed into standard scores to reflect variations with respect to a specific group on a specific test, in terms of standard deviation from the mean.

High standards of accuracy and fairness

The results of assessments may have a substantial impact on the client. Therefore psychologists must uphold the highest standards of accuracy and fairness when administering psychological test instruments. The ethical responsibility extends to striving to ensure that others both understand the limitations of assessments and that they do not misuse the results. The psychologist should take care to consider the various factors which may have changed the outcome scores, such as cultural or age factors, practice effects, or contextual factors.

Formal reporting

In a formal report used for legal or decision-making purposes, the assessing psychologist should state their training and experience with this type of assessment. This will enable readers of the report to assess how authoritatively the psychologist speaks.

Upholding the highest standards of accuracy and fairness when administering tests

Planning

A key question about the selection of a test is "What is the purpose of the assessment?" The psychologist should not necessarily accept the referral question at face value but should discuss the referral question with the referrer to clarify the objectives of the assessment before planning it. The referral question may not be appropriate or answerable in the form it is initially presented.

The psychologist should resist pressure to explain the cause of the results or interpret the results beyond what is described in the evidence. The psychometric assessment only provides a snapshot of the functioning of the client at the time of the assessment. It does not substitute for a formulation about that client based on much broader and triangulated information from multiple sources.

Psychologists should base decisions about testing on a thorough analysis of the client's requirements and the purpose that the assessment is addressing. For example, in an employment selection process, the test should be valid for measures that correlate well with the occupational competencies of interest. In this employment example, the test would also need to be pitched at an appropriate level of difficulty to differentiate between individuals on the target attributes of interest. In an educational setting, the purpose of the assessment may be to measure performance relative to the age cohort or the target skills required for successful learning.

A psychological assessment often proceeds by the psychologist formulating hypotheses about the client and then testing these by gathering data to support or disprove them. The psychologist using psychometrics for this purpose should carefully select tests that provide information relevant to the case. They should also carefully consider the advantages and disadvantages of any particular test within a proposed assessment strategy so that they can justify the test they choose.

Considering the effect of intellectual disabilities

Psychologists should take care when reporting the test results of intellectually disabled clients. For example, reporting age equivalent scores for adults with developmental delay may be misleading unless the results are carefully interpreted to take into account the client's life experiences and biological development.

Client motivation

The psychometric assessment will be of most value if the client is motivated to do their best, is interested and engaged, and the relationship with the assessing psychologist enables honesty. The psychologist can help this happen by describing the purpose of the assessment to the client and behaving professionally.

A professional approach in this context would require the assessing psychologist to be respectful and friendly while putting the client at ease by appearing neutral and unbiased. The psychologist should not be overly familiar or negative. If a client is observed to be anxious, distrustful or unmotivated, the psychologist should note this as a constraint on performance, and take it into account when interpreting the results.

Targeted testing to avoid "over-testing"

An individual may be given multiple tests at one time. Ideally, these tests should be carefully selected to answer specific clinical questions about the client. Administering a standard set of tests, often referred to as a "battery" of tests, increases the risk of "over-testing" the client, and reducing the effectiveness of any future assessment of them.

The psychologist should consider the purpose of the assessment when choosing which tests to use. For example, the assessment could be for information gathering, triage, predicting future performance in a role, comparison with peers, cognitive screening, or a comprehensive psychological assessment to build up a profile of abilities and weaknesses.

Neuropsychological diagnostics

If the assessment is for the purpose of neuropsychological diagnostics, the assessor may have a good knowledge (prior to starting the assessment) of the likely or possible neuropsychological profile for that client and the norms for the selected tests. These advance hypotheses may enable the assessor to know how to respond or redirect the assessment as information comes to hand. The psychologist needs to balance the value of having working hypotheses against the need to keep an open mind to avoid bias and predetermination.

Fit for purpose

Any test selected should be fit for the purpose for which it is intended. This applies to the use for which it was designed and validated and the client group on which it was developed. The statistical properties of that test apply only to the intended use, administered in the prescribed manner, and scored according to instructions. Ideally, an assessment proceeds using the least intrusive way to gather information available, keeping the psychometric testing to an ideal level (which may mean keeping it to a minimum).

Following test instructions

Psychologists must carefully follow the directions and instructions for a test to ensure they can compare the results to the results of others. They should record their rationale for any variance from the prescribed administration of the test. The Board recognises that psychologists may need to alter how they administer the tests because of the clinical situations. Under such circumstances, psychologists will need to note the potential impact of the variation on the scores and make allowances in the interpretation of results. Psychologists should also be alert to possible constraints on their interpretations of results, for example, where a client may vary from the test's normative group because of their ethnicity, age, disability, gender, or other attributes.

Practice effects

If the client has previously been assessed in a similar manner, the psychologist should be aware that practice effects may influence the client's performance. These risks may be managed proactively, such as by using an alternative test with similar properties, using an older version of the test or by making statistical allowances.

Distractions

Before the psychologist starts the assessment session, they should remove all sources of distractions. E.g., they should turn off their mobile phone or pager, and ask the client to do the same.

Test versions

Psychologists should use the most current version of a test unless there is a particular clinical reason for using an earlier version such as comparing current performance to an earlier baseline. Even in this situation, many tests have scoring formulae to enable comparison between the current version and an older one. The reason for choosing an older version should be clearly noted in the report. Clients should be welcomed and

briefed in a manner that reduces anxiety. If the client continues to show anxiety, appropriate assistance may need to given. This may include providing encouragement and emotional reassurance, taking a tea break, or suggesting that a support person be consulted or invited to the assessment. The inclusion of a third-party into the assessment situation is discussed more fully below.

Informed consent

Obtain consent before commencing the test

Psychologists must gain informed consent from a client before proceeding with a psychometric assessment. The Health Information Privacy Code and the Privacy Act, require that the client is informed of the purpose of the assessment, how the information may be used and who may have access to those results. Extra care may need to be taken with those with language barriers or intellectual disability to ensure that the client understands what is involved.

Any reasons why the usual rules that protect confidentiality might not apply should be explained at this time. If the report is being prepared for a third party under contract, it may not be possible for the psychologist to state who will have access to it and what the report may be used for other than in general terms.

Client understanding of the consequences

Gaining informed consent may include the psychologist discussing the consequences of taking, or not taking the test so that the client can make an informed choice. For an intellectually disabled client, this may mean talking through possible consequences of being found incompetent. By informing the client of the potential risks and benefits arising from the assessment, the client can exercise their right to choose while understanding the likely consequences.

The psychologist should be alert to any limitation of a client's capacity to give or decline consent, including medical or psychiatric diagnoses, physical or cognitive incapacity, language or cultural barriers.

Obtaining consent from others

In a situation where the client is unable to consent, the psychologist may need to consult with relevant family, the person's legal counsel, the enduring power of attorney, or seek a court order. This may be particularly relevant to assessments determining functional competence or where the client is disabled.

Where children are involved, obtaining informed consent is likely to require the consent of parents or guardian. When the psychologist is assessing the child of separated parents, they should usually seek informed consent from both parents. If this is not

possible, they should seek consent from the legal guardian or the parent who has custody. The age that a child becomes their own decision-maker to give informed consent varies with the development of that child depending on the child's ability to understand the purpose.

The collected information must be relevant to the consented purpose

The Privacy Act and related Health Information Privacy Code, require that psychologists only collect information which is relevant to the purpose for which informed consent was given. The consent is likely to specify when the psychologist can perform the assessment and the situation in which can take place. The psychologist should seek additional written informed consent if

- circumstances change
- there is a significant lapse in time
- additional parties request a copy of the report
- the purpose of the report changes.

The consent must include the recipients of the results

The psychologist should clearly identify the parties who can receive the test results. The psychologist's ethical obligation to ensure the client gives informed consent includes obtaining consent for releasing a report or psychometric results arising from a historical assessment.

Interpretation

Generally, psychologists should only release interpreted results rather than raw data.

Interpretation of results should not be based solely on psychometric tests

Psychologists should interpret test scores in conjunction with other collateral information, such as information from interviews, the information given by relatives and friends, observational data and previous assessment reports. They should not base far-reaching conclusions or diagnoses which have a high impact on the client's life on a psychometric test or a one-off assessment. They should consider all reasonable alternative explanations for the results.

Constraints on interpretation

Psychologists should state any constraints on the assessment that may affect how the results are interpreted. Many factors can compromise a client's performance on a psychometric test, including

- the client's mental or physical state
- side effects of medication
- language or cultural barriers
- educational limitations to understanding
- the testing environment
- the interaction with the tester
- fatigue
- the client's recent and historical background.

The psychologist may need to differentiate between impairment of functioning which is transient and short term, or that which is more enduring. Constraints on interpretation may also include the lack of normative data for a client's ethnic, cultural or social group.

When a psychologist identifies constraints, they should record the constraints and allow for them in the interpretation of results.

Practice effects

If the client has undertaken the same psychometric test before, the assessing psychologist should be mindful of any practice effects and allow for that in the interpretation of results. Comparison of scores on repeat assessments may give useful information.

Caution with computer interpreted or generated reports

Computer-interpreted test results or a computer-generated report are not adequate alone as an assessment report. The psychologist must consider additional information, clinical observations, and other known data about the client when evaluating the computer-based interpretation of test performance or the computer-generated report.

Derived scores

Psychologists should take care when reporting derived scores, such as standard scores, percentiles and age-equivalents. This will help mitigate the risks that arise from results being read by people who lack understanding or training in the use of psychometrics. For example, people reading these measures may regard them as more fixed and enduring than is appropriate. Psychologists should explain any cautions about the limitations on the reliability and validity of such scores.

Caution with over-generalisation

The psychologist should avoid over-generalising the results of one test to traits or characteristics not measured by the test. For example, a psychologist may be asked to predict a client's success in real-life situations, such as academic success, current and future employability, the performance of daily living tasks, medication management, or ability to drive. In such cases, they should only extrapolate results if they have established that the test results are predictive of those daily functions, or that performance on the tests are highly correlated with performance in the real-life settings.

Symptom validity testing, reliability and dissimilation

The interpretation of psychometric assessment results relies on the results being valid for that individual. The value of an assessment to meet the purpose for which it has been completed depends on the quality of the test data used, including the client's willingness to follow the test requirements. Effort or motivation indicates the client is performing at their capacity, demonstrating their willingness to comply with explicit or implicit instructions regarding speed, accuracy or other performance requirements. Effort is not one-dimensional, but is a concept which may be assessed and inferred from observations of behaviour. Ideally, a client demonstrates their best effort in a testing situation. Effort can vary from poor to outstanding as part of natural variation. When gaining informed consent, the psychologist should explain to the client that they should perform to the best of their ability and that the psychologist may include tests of effort in the assessment.

In some assessments, the client may know there are advantages or potential advantages to them presenting themselves in a particular way. In these cases, the psychologist should consider and comment on the issue directly. There may also be unexplained discrepancies between client self-report, various sources of collateral information, observed behaviour and changes in functionality over time. In these circumstances, the psychologist may choose to include tests which are sensitive to detecting the effort applied by the client.

Effort testing is intended to give reliable and valid indices which are sensitive to distortions in motivation. Psychologists[4] can make distinctions between effort tests which are assessing performance validity and symptom validity. Performance validity tests clarify the extent to which a client's test performance is an accurate indication of their ability. Symptom validity tests refer to the accuracy of self-reported symptoms as, for example, shown by tests which ask the client to report attributes and may include embedded validity scales. A failure on a performance validity test means that the client has performed poorly below a suitable cut-off or below their capability as determined by other criteria.

[4] Larrabee, 2012.

Differing professional opinions about effort tests

Some psychologists think that effort tests should not be routinely included in assessments of cognitive function. Others advocate that it is "best practice" to include effort tests, particularly if clients are involved in litigation or claiming financial benefits for disability. In this context, it is argued that effort testing indicates the validity of the assessment and also may protect the client from unfair criticism. Decisions about the allocation of treatment, rehabilitation, financial support, medication or culpability in a legal context may be based on the test results. Research has shown that external incentives can influence performance.

Ethical considerations

The following ethical considerations[5] apply:

- Use only well-researched effort tests. The selection may need to be guided by client disability.
- Use multiple effort tests to reduce the likelihood of false-positive diagnosis of poor effort. Research[6] has suggested that using more than one performance validity test reduces the incidence of false-positive errors.
- Performance validity testing must be undertaken with careful attention to administering tests in standard ways and noting any constraints on interpretation.
- Explain to the client that it is important to provide their best effort and to report symptoms and problems accurately, as failure to do so can often be detected.
- If testing occurs over an extended session or more than one day, be alert to the possibility that the motivation to succeed may fluctuate. Any effort tests should be distributed throughout the testing sessions.
- Examine performance patterns to ensure they make biological and psychometric sense.
- The clinical judgement of low effort should be based on more than one effort test.
- Information from various sources should be integrated and compared for consistency, including behavioural observations, interview data, collateral records, collateral interviews, and psychological and neuropsychological test results.
- Poor performance in an effort test may occur for various reasons. The assessing psychologist should consider all reasonable possible diagnoses or explanations for the observed behaviour, and list the evidence for each of these alternative explanations.

[5] Iverson, 2006, 2007.
[6] Cited by Larrabee (2012)

- Conclusions should be stated explicitly and clearly. Psychologists have an ethical responsibility to report assessment results fairly, accurately and objectively. Any references that are critical or pejorative should be avoided as they would likely breach the Code of Ethics.

An operational approach to diagnosing low effort

An assessment of performance validity requires the psychologist to consider the pattern of performance across multiple measures. One approach which has been widely accepted gives an operational approach to diagnosing low effort.[7] The following criteria must be met to use this approach:

- an external incentive has been identified
- there is a negative response bias
- behaviours cannot be accounted for by psychiatric, neurological or developmental factors
- the evidence for the negative response bias is drawn from:
    - below chance performance on forced choice measures of cognitive functioning
    - performance on one or more well-validated psychometric tests designed to measure feigning
    - a discrepancy between test data and known patterns of brain functioning
    - a discrepancy between test data and observed behaviour
    - a discrepancy between test data and reliable collateral data
    - a discrepancy between test data and documented background history.

There may be implausible changes in test scores across repeated examinations and unusual or bizarre errors observed during the interview.[8] The self-report data should be considered for discrepancies with other information gathered and for indications of exaggerated psychological dysfunction.

Factors that can contribute to low effort

It may not be straightforward for a psychologist to determine why a psychometric test indicates that less than optimal effort has been applied. The following factors[9] may contribute to performance validity:

- dementia states with fluctuating attention span
- sensory or motor impairment

[7] Slick, D. et al (1999)

[8] British Psychological Society, 2009.

[9] British Psychological Society, 2009.

- abnormal arousal states
- severe psychiatric disorder
- poor communication or understanding of the demands of testing
- physical factors such as musculoskeletal injuries (e.g. peripheral neuropathy).

However, effort tests are designed to be very easy, and performance in these tests is not usually affected by other factors. Clients with diagnosed neurological conditions often still show performance levels in the valid range of performance validity tests. Test performance[10] has been shown to be unaffected by pain, fatigue, psychiatric disorders or depression and anxiety states.

Adopting a conservative approach

A conservative approach for a psychologist is to interpret low effort in one part of the test series to indicate that all other results are under-representing the person's abilities. This would also mean that the test data should not be relied on to give a valid indication of performance and therefore, may not be interpreted in a meaningful way.

Inconsistent self-reporting

When self-reports are not consistent with other data, an assessing psychologist should not assume deliberate intention to mislead, i.e. poor symptom validity. The client may inform the psychologist in good faith and have no intention to deceive but may:

- have become highly focussed on their difficulties
- (falsely) attribute pre-existing symptoms to an accident
- report a higher than actual pre-morbid level of functioning
- catastrophise current symptoms
- have difficulty reporting current functioning accurately.

Key terms relating to validity testing

Distinctions can be made between the following terms. However, these states may be overlapping in a client's presentation:

- Symptom validity: the accuracy or truthfulness of the client's behavioural presentation and self-reported symptoms.
- Performance validity: the accuracy or truthfulness of the client's performance on tests (usually neuropsychological measures).

[10] Research cited by Larrabee, 2012.

- Response bias: an attempt to mislead the examiner through inaccurate or incomplete responses or effort.
- Malingering: the intentional production of false or exaggerated symptoms, motivated by external incentives.
- Dissimulation: the intentional misrepresentation or falsification of symptoms by over representation or under representation of a true set of symptoms in an attempt to appear dissimilar from one's true state.
- Factitious disorder: physical or psychological symptoms that are intentionally produced or feigned in order to assume the sick role. In a factitious disorder, the symptoms are motivated by internal emotional and psychological issues, which lead the person to maintain a sick role, rather than the client being motivated by external incentives.
- Somatisation disorder: recurring, multiple, clinically significant somatic complaints which cannot be fully explained by any known general medical condition or the direct effects of a substance.
- Conversion disorder: symptoms or deficits affecting voluntary motor or sensory function suggestive of a neurological or other general medical condition which is considered to be triggered by internal conflicts or emotional states.
- Pain disorder: diagnosed when pain is the predominant focus of the clinical presentation and is of sufficient severity to cause significant distress or impairment in functioning. The pain is considered to be caused or maintained by psychological factors.

Providing feedback to the client about low effort

In assessments carried out for clinical and rehabilitation purposes, psychologists should provide feedback to the client even when they have detected a lack of effort, or they suspect the client has exaggerated emotional and behavioural symptoms. This discussion may lead to a clearer identification of the reasons for underperformance or exaggeration of symptoms which the psychologist can then target for therapy/rehabilitation. For example, providing feedback on a perceived lack of effort may be structured around a discussion in the form of "what factors can get in the way of you performing at your best?"

Third-party observers

Effect on standardised conditions for a test

Interpretation of psychometric results relies on the test being administered in a standardised way to allow the results to be compared with the normative population tested in the same way. These standardised conditions are likely to be compromised by the presence of a third-party observer (**TPO**).

Dispensations

As a general principle, wherever possible, assessors should stick to the standard conditions. However, the Health and Disability Commissioner's Code of Patient Rights gives a client the legal right to request a support person to be present. Also, there may be circumstances in which the presence of a TPO enables testing to take place.

Rule 8 of the Code of Health and Disability Services' Consumers' Rights, allows a health consumer to request a support person to be present. The Office of the Health and Disability Commissioner has interpreted this rule as meaning that the subject of an assessment has the right to expect a support person to be present during psychometric testing. There are exceptions to this right:

- if safety may be compromised
- if another health consumer's rights may be unreasonably infringed
- if declining the request for a support person is reasonable in the circumstances.

The Code of Rights has legal status which overrides the Board's Code of Ethics. This means the rule supersedes the ethical obligations of the psychologist to avoid having a TPO present. If a client requests that a support person is present during a psychometric assessment, the psychologist assessor should try to gently persuade the client by explaining the disadvantages. However, if the client is not convinced, their right to have a support person prevails. The psychologist may decide to decline to conduct the assessment rather than compromise their practice.

Effect on test validity

The greatest validity for a test is obtained when the client is motivated to cooperate with the assessor to perform in compliance with the instructions in a standardised, controlled environment. The presence of a TPO risks the validity of the test results by potentially impacting on the client's motivation, altering the rapport with the examiner. It may

affect the client's response to the test items by the distraction both from the physical presence and the internal processes stimulated by the awareness of the TPO's presence.

The effect on the client's performance of having an observer present will likely vary depending on the nature and purpose of the assessment. The performance will also be affected by the manner of observation and the client's sensitivity to being observed. However, research studies have tended to consistently show lower performance with a TPO. Studies also show that the impact is variable and unpredictable, so cannot be controlled or allowed for in the interpretation beyond placing less reliance on the results. The psychologist should refer to the research literature for individual tests to gain an understanding of the evidence on the relative sensitivity to a TPO being present.

Tests measuring attention, sustained concentration, verbal fluency, learning and memory have all been shown to be sensitive to the impact of having an observer present. Some clients are less likely to share personal information if an observer is present.

Risk to test security

There is also a risk to test security, which is against the ethical obligation for psychologists to make all reasonable efforts to maintain the integrity and confidentiality of test materials. The psychologist has no control over how a TPO may use the observations of tests allowing the possibility of test misuse, including misinterpreting poor performance or coaching.

Reasons for a TPO

The request to allow a third-party observer may arise for a variety of reasons, including

- the desire to have a support person or whanau present
- a child wanting a parent or caregiver to be present
- a trainee wanting to observe the psychologist
- a desire to record a session as part of gaining evidence for legal purposes.

Also, there may be circumstances in which the presence of a TPO is necessary to make the assessment situation accessible. In these situations, psychologists should take a client-centred approach. For example, there may be barriers arising from the lack of linguistic knowledge or expression, a physical inability to see or hear, or a lack of the emotional security needed to engage in the cognitive processes. Situations which may be enhanced by the presence of another include

- a parent with an anxious child

- an intellectually disabled client requiring support
- a migrant from a substantially different culture
- a sign or language interpreter assisting a client to overcome those barriers
- an assistant to facilitate physical accessibility.

The psychologist's response

When a TPO needs to be present, the psychologist should document the reasons and rationale, including the client's consent and preferences. They should carefully consider ways to minimise the impact of observation on validity and fairness. Possible steps include seating the observer behind the client and ensuring the observer consents to not speaking or otherwise influencing the client during the assessment.

Active participation of a TPO

If the TPO needs to be more actively involved, their participation should facilitate but not undermine, impair or enhance the assessment. The psychologist should warn the client that the TPO may affect the results when obtaining consent and document this as a possible limitation on interpretation.

Psychologists' responsibility to educate

Whenever possible, psychologists should educate non-psychologists about the reasons why psychometric testing should be conducted privately and confidentially without observation to protect the usefulness of the tests and the inherent intellectual property.

Cultural considerations

The importance of relevant comparison groups

Ideally, psychologists use psychometric tests that have been developed and show validity for measuring the attributes of interest in populations that fairly represent the clients. Relevant comparison groups provide a normal distribution with which the individual's score can be compared. The normative group for the test must be appropriate to the context and purpose for which the test is being used to avoid misleading conclusions. The comparison group needs to be as similar as possible to the situation in which the client's behaviour is being predicted or measured against.

Limited availability of normative standards relevant to New Zealand

Few psychometric instruments have New Zealand normative standards available. A group of researchers who developed New Zealand normative data for the Rey Complex Figure Test found several significant differences between their results and the American standardisation data, but no overall ethnic differences.[11]

Performance impact of cultural bias in normative groups

There has been little research on the validity of psychometric instruments used with various cultural groups, but three research studies illustrate how interpretation could be misleading:

- Research[12] has shown that young Māori men with no known history of traumatic brain injury may show as much as five scaled score points difference between subtests on the Wechsler Adult Intelligence Scale-Revised, with relatively lowered Vocabulary scores but with Block Design results elevated by as much as one standard deviation when compared with others of that age.
- Administrators of the SF-36 health survey could assume that all cultures interpret the health questions the same way, but research[13] has shown that Pacific and older Māori conceptualise their health differently.
- Research[14] on rehabilitation outcomes after traumatic brain injury which used cognitive assessments before and after intervention concluded that Māori, Pacific and Pakeha groups all benefitted from the programme, but that the years of education and English as a second language were confounding factors in

[11] Fernando, K.,Chard, L., Butcher,M., and McKay, C.(2003)
[12] Ogden, J. and McFarlane-Nathan, 1997 cited in Ogden, J., 2007.
[13] Scott, K. et al, 2000.
[14] Faleafa, M., 2009.

interpreting the psychometric data. There were other cultural differences between the groups in their psychological outcomes.

These three studies illustrate that psychologists should be alert to the cultural bias of tests developed and normed for a different cultural population. Significant differences in performance have been found between the average performance of different ethnic groups or between men and women. This raises the possibility of adverse outcomes arising if the test results are used for making decisions. These examples also suggest that differences between cultural groups may not be intuitively obvious.

Causes of performance differences

Differences in performance may arise from factors that include

- differences in socio-economic conditions impacting on educational opportunities
- the language of the psychometric tool being different from the native language of the test taker
- discomfort/ perceived threat in the test situation
- a lack of familiarity with images used in test items.

Simply translating the test into the client's native language may not render the test valid as there may be no equivalent cross-cultural constructs.

How to accommodate cultural and language differences

If it is not possible to use psychometrics with normative data matched to the client, and the psychologist is not culturally matched to the client either, attention should be given[15] to making the setting comfortable for the client. Cultural advice may be sought on how to put the client at ease. Tests should be chosen with care and performance interpreted tentatively, using collaborative information from a wide range of other sources. These sources can include observations of others, as well as work and education records. Tests which rely heavily on formal western education and have culturally alien concepts should be avoided when assessing Māori or Pacific people until any cultural biases in the tests are clarified.

A self-reported ethnicity of Māori cannot be assumed to mean the same thing to all individuals in that category. Some psychometric development has focussed on measuring Māori knowledge[16] and dimensions of Māori identity and cultural engagement.[17]

[15] Ogden, J. 2007.
[16] Thomas, D. 1988.
[17] Houkamau, C. And Sibley, C.2010.

If translators are employed, the accuracy of the translation may be problematic as it introduces variance both in delivering the instructions and in recording the response. Wherever possible, an assessment should be conducted by an assessor speaking the same language as the person being assessed.

Responsible reporting of psychometric results

Key factors to consider:

- Generally, only interpreted results should be released to those whom the client has given consent to receive the information.
- Where a third party has contracted the assessment, it may not be possible to identify the recipients of the report except in general terms.
- Some contracted reports prohibit the direct release of the report and its findings, such as those contracted by the Family Court, which strictly controls who has access.
- Complex reports or ones that could possibly be used in legal action should be reviewed in supervision before being released as a safeguard for the psychologist and the client.
- Psychologists who are in training or at an early stage of their practice should also have their assessments routinely reviewed.

Targeted reporting

The discussion of the results in the report should address what the interested readers need to know. A concise, targeted assessment directed at the objectives of the assessment is more likely to be helpful than an overly inclusive, long, unfocused review of functioning. Interpreted results should explain the test outcome integrated with other data, and any limitations or constraints relating to the outcome. It should also give the confidence with which the results can be considered (sometimes expressed as a confidence interval) or the likely reliability of the measurements. The test outcome often compares the client with others on the attribute or measure of interest.

Organisational considerations

If the assessment has been conducted in an organisational or employment setting, the psychologist should establish, during the consent gathering phase, the purpose of the assessment and who can see the results. These requirements must then be closely followed. The raw data should not be left with the organisation. The assessing psychologist should attempt to anticipate any potential misuse of the test and use appropriate risk mitigation strategies. These could include:

- stating the limits of the use of the test
- providing contact details to be used if further information and interpretation be required

- assuring the client and the contracting organisation that the original test material is stored securely.

Reporting in health and education settings

In a health setting, the psychometric assessment should add value to client treatment and management planning. The report should give a good summary of the functioning as measured by the assessment and provide any recommendations to improve the rehabilitation or quality of life of the client.

If the report is within an educational setting, take great care when deciding what to include. A report may stay on a child's record for a long time and be influential in decisions about that child, such as the allocation of resources. A child's performance relative to peers may change considerably as they get older.

In both health and educational settings, psychologists should be cautious with their diagnosis or labelling of a client. Their opinion may potentially be stigmatising and lead to wide-reaching impacts for the client, and could even be destructive. The reporting of results for an intellectually disabled client needs to avoid misleading age comparisons as the chronological age is likely not to match developmental profiles.

General rules for fair reporting

Psychologists should follow these general rules for fair reporting:

- Oral feedback to a client should be presented in a constructive and supportive manner, using language which they understand.
- The results of a psychometric assessment should acknowledge the limitations and constraints on interpretation.
- The reporting should make clear what is factual information and what is professional opinion or interpretive comment.
- The technical and linguistic levels of written reports should be appropriate for the level of understanding of the recipients.
- The weighting of the test result as compared to other information, should be explained.
- Written reports should include a summary and any recommendations arising.
- If the report is being used to inform a decision, such as recruitment selection, any limitations to the predictive validity should be explained.

Results should only be used for the purpose of the consent

Psychologists have an ethical obligation to try to make sure assessment results are understood and used only for the purpose for which consent was obtained. This may be difficult if the information is given to a third-party organisation or contractor. When obtaining informed consent, psychologists should make sure the client understands any limitations on how access to the information is controlled.

The potential risks in how tests are used and how those risks can be mitigated

The significant and long-lasting effects of psychologists' reports

When completing assessments, psychologists report on sensitive information in a manner that may have profound t and long-lasting effects on their clients. Psychologists are expected to conduct the assessments as ethically and competently as circumstances allow. The more serious a decision that may arise from an assessment, the more stringent the decision-making criteria need to be. If the assessment will be the basis for a long-lasting or high impact decision, the results must be validated to a high standard.

Limitations on the accuracy of tests

Psychologists should take care to consider differential diagnoses and lines of enquiry when interpreting the results of assessments. Mental health factors such as depression, anxiety, and thought disorder may contribute to current functional impairment. Wherever possible, psychologists should seek information from multiple sources, including self-reporting, behavioural observation, rating scales, clinical interviews, interviews, and reports from collateral sources of information (such as family, friends, employer, other clinicians). The assessment should clarify the duration of presenting problems and their comparison to pre-morbid functioning.

Confirmatory bias

Confirmatory bias occurs when a psychologist seeks and favours evidence that supports their pre-existing opinion, at the expense of plausible, alternative explanations for the test results. For example, a psychologist may attribute working memory deficits to a historic mild brain injury while ignoring a pre-accident history of learning problems and on-going substance abuse. All possible hypotheses need to be considered and examined.

Natural variability in test scores

Psychologists also need to be aware of the scatter of test scores in normal healthy individuals, especially the prevalence of low scores. This will help psychologists to avoid relying too heavily on isolated low test scores when formulating professional opinions.

Bias caused by pressure from contracting organisations

The psychologist may be biased by a desire to supply the answer requested by the contractor. There is a risk of the psychologist being "captured" by the contracting organisation, either through the contractor setting prior expectations as to the expected

outcomes or predetermining the nature and content of the assessment (rather than the psychologist exercising their own professional judgement). Similarly, while the contractor is entitled to decide on the questions to be addressed in the assessment, the psychologist should retain the right to choose the most professionally appropriate way to do it.

Bias caused by pressure from clients

Bias can also be caused by the client placing pressure, either explicitly or covertly, on the psychologist to present a particular set of findings. The psychologist should protect their professional independence and integrity by preserving the right to form an opinion based on the assessment results. The psychologist may need to make clear to the client that their professional opinion is independent.

Insufficient attention to constraints on interpretation

A psychometric assessment may be misleading if there is insufficient attention to the constraints on interpretation. Normally, an assessment is a multistep process that includes integrating and comparing information from many sources. Discrepant or inconsistent information may need to be investigated further or may indicate the need for another assessment at a later stage.

Practice effects

Repeat assessments may cause the client to become overly familiar with the tasks required. Some tests are susceptible to practice effects which could boost performance.

The relationship between the assessor and the client

The relationship with the assessor may act as a constraint or limitation on the client's ability to comply with an assessment.

Keeping psychometric records

Safeguarding confidentiality

Psychometric test results, including both the raw data and the interpreted results, should be safeguarded to preserve confidentiality and to ensure they are only used by people with appropriate training.

Raw data

Raw data from psychometric assessments should be retained in a secure file. In an organisational or health service setting, this will likely mean the psychologist has to keep psychometric assessment records in a separate, secure filing system rather than in the client's personal or health records (which may be accessed by other professionals and non-professionals). They could potentially keep the psychometric records on the main file in a sealed and labelled envelope, if this is secure.

Retention for ten years

The Health (Retention of Health Information) Regulations 1996, requires all client records to be retained for at least ten years from the date of the latest client contact. This includes the raw data from psychometric assessments.

Anonymising data used to develop tests

Names and personal identifiers should be removed from test results used for research purposes, or where the data has been used to develop norms.

Handover of results to a subsequent assessor

If a client undertakes repeated psychometric assessments, the psychologist assessor would benefit from access to the previous assessments' results for comparison. Psychometric records may be released to the psychologist concerned with the client's permission. Raw data should not be released directly to the client or any other untrained person.

Using Online Services

The new normal, but there are risks to manage

There is a trend toward using online services to deliver psychometric testing. This may involve the administration, scoring, interpretation, or storage of a psychometric tool or test data using cloud-based storage facilities. Such services raise a potential issue regarding the interpretation of the results, which should always be integrated with other information about the functional behaviour of the test subject.

There are also risks about the security of the information generated using an online service. Psychologists remain accountable for the secure storage of client information and ensuring the information remains retrievable (for a minimum period of ten years, or longer if the results remain relevant). Psychologists should be aware that there are risks associated with using off-site storage (covered in the Board's Best Practice Guidelines on Record Keeping).

Responsible use and the protection of the intellectual property of tests

Safeguarding test integrity

Psychologists should protect the security of standardised and controlled tests where possible. This includes respecting copyright restraints and preventing unauthorised access to psychometric instruments. The spread of information on the internet about psychometric tests makes it difficult to control access to them. A sufficiently motivated client could find information before an assessment by searching up

- professional reference material
- conference presentations
- advertisements promoting tests
- YouTube clips
- training videos.

Trained test administrators

Test administrators who are not trained or lack the requisite skills may use tests inappropriately. Where necessary, psychologists should educate colleagues and the public about the appropriate use of tests and the need to safeguard the confidentiality of the contents of tests.

In a multidisciplinary team context, professional colleagues untrained in psychometrics may request to access or use the tests. While the use of non-standardised checklists or systematic observations may be used by non-psychologist colleagues, any tests relying on standardised administration and interpretation which have been validated against normative groups should not be made available. To do so would risk degrading the integrity of the test or creating misleading information. Checking with the NZ Council for Educational Research (NZCER) https://www.nzcer.org.nz/ or with the publisher of the test will clarify possible restrictions or necessary qualifications for test use.

A psychologist in a team context should take a lead role in safeguarding psychometric instruments and ensuring that any tests are used ethically and only by people who have had appropriate training.

Audio and video recording of tests

Ordinarily, audio and video recording should not occur when psychometric measures are being administered in order to protect the integrity of the test measures (see exceptions noted in the next paragraph). Audio and video recording allows ready

access to the test materials by the general population and violates the protection of test materials. This can provide people with an undue advantage when tests are administered at another time, for example, for recruitment purposes. It can also allow measures of effort to be easily identified by people who later use this information in a manner unintended by the test developers. i.e., if the content of performance validity measures became widely known, then they may become invalid indicators of effort.

Clients may request that the assessment be recorded, for example as a memory aid or to refer to later should there be a dispute over the outcome of the assessment. This is particularly likely in a legal context. The psychologist should respectfully explain why this is not allowable in order to protect the integrity of the test, ensuring its continued usefulness, by avoiding the contents becoming common knowledge. There is also an ethical obligation to protect the intellectual property of the psychometric tools. Psychologists should be alert to clients using a smartphone or other technology to record a test situation secretly.

There may be circumstances where there are sound ethical reasons for recording, such as for

- teaching and training purposes
- research
- quality control purposes
- development of psychometric instruments.

In such circumstances, ethical practice would be safeguarded by

- attention to consent processes
- safeguarding the recording
- documenting the rationale for the action taken
- transparently considering the risks and any risk mitigation.

Caution to be taken when releasing test data

In a situation where a psychologist has to release assessment data, such as in a legal dispute, a complaint investigation or a competence review, then the test materials should only be given to another psychologist. If a psychologist is put under legal pressure to release raw data to a non-psychologist, they can decline the request. This may result in the applicant requester asking a judge to evaluate the arguments for considering the psychometric data as privileged, and therefore not admissible, versus the common law right for people to know the evidence against which they may be judged.

Objections to the release of the raw data could be presented to the court, such as the risk of misinterpretation by an untrained person, protecting the integrity of the test and the intellectual property rights of the test distributors. If the judge orders that the raw data is to be released, the psychologist must oblige as to refuse to do so would be in contempt of the court. However, where possible, the risks arising from the release should be mitigated as much as possible. If a psychologist is unsure of their legal right to withhold psychometric data, they should obtain independent legal advice. Often such advice is available through an indemnity insurer.

Psychometric assessments used in a legal dispute may also lead to a situation where a second expert assessor is employed to critique the first assessment. The original assessor may be requested to release the raw data to that second assessor. Any such release should only occur with the client's permission. The critiquing psychologist should be mindful of the risks of interpreting data out of context.

Test techniques should not be described publicly as that may reduce their usefulness.

Training in how to use psychometrics

Psychologists should be knowledgeable and experienced in the use of a specific psychometric test before employing it with clients. Psychologists may need specialist training for a test and refresher training when appropriate.

Training for the use of psychometrics should include (but is not restricted to) knowledge of:

- Basic psychometric principles, procedures and the technical requirements of tests (including reliability, validity and standardisation).
- Specific tests and the purpose to which they may be used to enable the proper interpretation of test results.
- Relevant theories and models of ability, personality and other psychological constructs, or of psychopathology to inform the choice of tests and the interpretation of results.
- The range of tests and test suppliers relevant to the specialist domain of practice. There is on-going development of new tests on the market. An organisation such as NZCER which is not aligned to any particular test distributor and is non-profit making can offer independent advice about the range of tests available for a particular purpose. NZCER also offers a lending library through which a registered user can access a manual to study before purchasing a specific test.
- Skills for specific assessment procedures and instruments, including the standardised conditions relating to the administration of a particular test.
- Ethical and legal issues about using tests, reporting results and securely storing test data.
- Professional responsibilities for the proper use and storage of test materials.
- The qualifications and experience specified by the test suppliers for each psychometric tool (NZCER categorises tests (levels A, B, Csp, C and D) depending on the level of training and psychometric knowledge required for the psychologist to use the test competently and ethically).

Use of psychometrics by students during training

Supervision

Students who are being trained to use psychometrics must be closely supervised by an experienced and qualified assessor. Students should only be able to access or purchase tests under the supervision of the responsible psychologist who remains accountable for any assessments and test security.

Informed consent

Informed consent from a client should include explicit information about the training status of the assessor and name the psychologist who is accountable. The responsibility of the supervisor or overseeing psychologist extends to ensuring that all stages of the assessment are not compromised or reduced in quality by the student undertaking the administration. Supervisors should take particular care in situations involving subjects who may pose additional challenges, such as the assessment of children, or when providing verbal feedback to the client and their family. The supervising psychologist should countersign the assessment report.

Practice testing

Students should be well informed on the theory and statistical properties underpinning the test before working directly with the psychometric test. Practice with the administration of the test should only be undertaken in controlled clinical situations. For example, it is not appropriate for the student to practise on a family member, but it may be possible for students to practise on each other in a classroom laboratory situation.

Special issues related to infants and children

Developmental factors

Any assessment of infants and children should take into account developmental factors. There is also a range of normal variation in the rate of cognitive development at any age level.

Multiple sources of information

As with adults, assessments of children should be based on multiple sources of information, including behavioural observations and collateral data. Psychometric tests with infants consist of structured observations and guided interviews of the caregivers.

Support

Infants and children should always be supported in an assessment to allow them to show their best performance. Infants and young children are co-regulated by their caregivers and attachment figures, rather than by strangers such as an assessor.

Concerns about using norm-referenced tests for children

Although there is some psychometric testing using standardised and normative reference tests with young children, the evidence for the use of these tests is relatively weak, particularly when the child has a disability. Concerns[18] raised about the use of standardised norm-referenced tests with young children include the following:

- They have low treatment validity as they do not directly inform intervention.
- They are not universally designed or adaptable, for example, for use with children with sensory challenges.
- It is difficult to capture the real-life behaviours/skills of young children. Contrived activities with unfamiliar people are not an effective way to indicate functional competencies.
- The emphasis on scripted standardised procedures to preserve reliability and validity of normative measurement is incompatible with the typical behaviour of young children who are likely to seek to explore their environment and have limited interest in staying still or attending to tasks controlled by adults.
- They do little to facilitate collaboration with parents or educators.
- Children with disabilities are often excluded from group data, and therefore the norms may not apply.

If the purpose of the assessment is to develop an intervention plan, the psychologist should use other assessment methods such as direct observation in natural settings and structured interviews.

A psychologist assessing a child is attempting to measure development while it is occurring. A 'one-off' psychometric assessment may not provide an accurate sample of psychological status.

[18] Macy and Bagnato, 2010.

For example, it could change the next day when a new skill emerges. Collateral information from parents and caregivers or direct observation in natural settings may help inform the assessor whether this presentation is representative or typical.

Factors influencing a child's performance

When assessing a child, a wide range of other factors may impact on performance, and the psychologist should comment on these in the report. Internal factors that should be considered include

- illness
- effects of medications
- nutritional states
- hunger
- sleeping habits
- physical mobility
- motivational interest level
- anxiety
- stress
- the ability to self-regulate internal and external worlds.

External factors may also be very influential, including

- the duration of a testing session
- heat
- cold
- noise
- the time of day
- family expectations
- maternal mental health.

Some language modification or subtest selection to suit the child is sometimes required.

Testing needs to be fit for purpose and presented in appropriate time intervals. For example, children six years old and under, or those who have attention difficulties are best seen in 1-hour sessions before midday. It may be best to split the session time down into even shorter blocks of time. If a child is unwell, it may be advisable to delay the assessment until they are back to normal health.

The importance of accurate interpretation

An overly simplistic interpretation of score results may not provide helpful or developmentally accurate information. Even worse, it may be significantly inaccurate and potentially damaging . Written clinical reports may form part of an on-going record in the child's medical or educational file and have an enduring impact on the child's future.

Psychologists should be very careful in their interpretation of test results and only make clinical judgements within their direct knowledge and experience. A range of other ways to gather assessment information such as direct observation and structured interviews should be considered rather than generalising from one-off psychometric assessments about conditions such as language, dyspraxia, learning disability, Autism Spectrum Disorder, preterm birth and Down syndrome. It is also important to realise that a particular observed behaviour may have several different explanations.

Children with developmental delays or disabilities

The Ministry of Health[19] operational guideline for the assessment of children with intellectual disability notes that "it is not always possible or useful to psychometrically assess children under the age of 6" (page 9). Psychologists must have a thorough understanding of the limitations of the use of psychometrics with infants and children who are developmentally delayed or with disabilities.

Extreme care should be taken when agreeing to psychometric assessment for infants and young children with developmental delay or disabilities:

- What is the purpose?
- What is to be gained?
- Who will manage the caregiver's initial and possible on-going distress following the discussion of results?
- Will the assessment results be used to inform the intervention plan?
- Do the recipients of the reported results fully understand the limitations of such an assessment?

Training students

Using students to carry out psychometric assessments with infants and young children, whether for clinical assessment purposes or within research studies, needs to be very closely controlled. The students must be properly trained and supervised and have sufficient experience to ensure they can get the best performance from the child and communicate appropriately with the parents regarding the child's performance.

Informed consent

While obtaining informed consent from parents or caregivers remains crucial for children of all ages, gaining consent and cooperation from older children and teenagers is very important.

[19] Ministry of Health "Operational Guideline for the Assessment of Intellectual Disability to Access Disability Support Services" page 9

Special issues related to assessing adults with an intellectual disability

Informed consent

Informed consent needs to be obtained when assessing an adult (defined as a person over the age of 18) diagnosed with intellectual disability. The psychologist needs to ensure the client is as aware as possible regarding the purpose and process of the assessment, and potential implications of the results. This may mean adapting and presenting information in a more accessible manner, for example, using simpler wording, pictures and objects. The psychologist also needs to assess the client's understanding by asking the client to relate back their perception of the situation in their own words.

If the client is unable to provide informed consent, the psychologist should seek it from a person legally allowed to provide this on the client's behalf; this would usually be an appointed Welfare Guardian. When an adult does not have a Welfare Guardian, as is commonly the case, a 'best interest' meeting should take place, where relevant people are consulted, and decisions with regards to the client's best interests are agreed.

In some situations, clients may be placed under a Court Order requirement to engage in and complete an assessment. Therefore, no formal consent from the client is required.

Limitations on the validity of tests

Assessors should note that many psychometric tests did not include adults with intellectual disabilities amongst the normative population. This reduces the validity of these tests for clients with intellectual disabilities, and assessors must consider this when interpreting the results.

Non-verbal clients

Psychologists can assess non-verbal clients using language-free tests, which have often been developed for people whose culture / first language may influence their scoring on other assessments.

Risks of making adaptations to tests

It may be tempting for an assessor to adapt the test material to make it less complex for their client by enlarging stimuli or simplifying test material. However, any changes are likely to affect the test validity. For example, enlarged test materials would require greater physical movements to complete the task which would affect the speed the client can complete the task, and unfairly impact on the processing-speed score.

Assessors should not copy or enlarge stimuli or simplify test material in any way as it would change the presentation or process of the assessment and therefore make the interpretation of the test difficult. Equally, it is unethical to substitute core subtests based purely on what the assessor believes the client can or cannot do. Substitutions should only be made if subtests are rendered invalid during the assessment (for example, if there was a significant distraction) as allowed within the test manual directions.

Assessing for intellectual disability

When the assessment is to ascertain whether a person has an intellectual disability or not, it is essential to

- complete an IQ assessment (or evidence attempting to do so if the person is unable to complete one)
- assess adaptive daily living skills
- obtain evidence that the person experienced developmental delay in their childhood.

It is also important to consider and assess the potential influence of any contextual factors that may negatively impact on a person's current abilities and subsequent assessment results (such as current mental health problems or head injuries).

Making allowances for longer test durations

An intellectually disabled client may require more time than average to complete an assessment and it can be helpful to plan to complete longer assessments over a couple of sessions (as close together as possible).

Effort testing

In most circumstances, it is best practice to complete an effort test as part of any neuropsychological assessment. The assessor should ensure the effort test used is suitable for a person with an intellectual disability, i.e. has a low enough baseline to accommodate low scoring due to low cognitive functioning rather this outcome being attributed to mood or malingering.

Making allowances for a shy client

Intellectually disabled clients are often accustomed to being acquiescent in their daily lives, and this should be kept in mind when completing assessments. For example, It can be helpful to agree, before starting the assessment, a way for the client to indicate they

need a break, such as by them raising a hand or tapping the desk. This can help empower clients who are too shy to ask directly.

Support

Individuals with an intellectual disability may benefit from having a support person present during their assessment. They have the right to do so as long as it does not pose any risk to them, other people or the assessment process. The presence of a support person may reduce the client's anxiety and therefore increase the likelihood that they perform to their best level. The support person should be requested not to interfere with the testing and to be seated out of the client's line of sight.

Simplifying test instructions

Some assessment instructions may need to be simplified to allow clients to understand what they need to do. Assessors should give all clients the standard instructions and provide them with the opportunity to say whether they understand the instructions or not. Any changes need to follow the original intent of the instructions and not give any further information or clues regarding accurate task completion. Similarly, it would not be appropriate to allow a client more than the standard number of practice trials on an assessment task. It is important to note when and how instructions were changed as this information provides useful insight into client abilities.

Any deviation from the standardised instructions may compromise the validity of the test and should be recorded, as per usual professional practice.

Avoiding a biased interpretation

An open-minded approach to neuropsychological diagnostic assessments may be helpful so as not to bias interpretation of results. Pre-existing hypotheses may influence the assessor's choice of assessments and the way the test behaviour and data are understood. It should also be recognised that an existing diagnosis of intellectual disabilities may over-shadow other cognitive issues such as dementia and brain injury.

Risks of age-equivalent scores

The reporting of age-equivalent scores is not always appropriate for adults with an intellectual disability as these scores can give the inaccurate impression of the client fitting neatly into a childlike developmental stage. The client has life experiences and the biological development of their chronological age which are beyond the experiences of a typical child sharing their cognitive abilities.

Appropriately skilled assessors

The particular issues with this special-needs group, mean that psychometric results should only be interpreted by professionals with the appropriate training, experience and qualifications. Results should be reported clearly, in their standardised form. Raw data should not be reported and should be kept with the original assessment paperwork.

Feedback to intellectually disabled clients

Clients are entitled to feedback on their assessment results and may appreciate a simplified version of their assessment report where appropriate. With permission from the client, it is often helpful to give results to a nominated person within the client's support network, for example, their parent or care-worker.

Further information

The Ministry of Health has issued a resource book covering the assessment of those with intellectual disability. *See* "Operational Guideline for the Assessment of Intellectual Disability to Access Disability Support Services Contracted for People with Intellectual Disability within New Zealand", published by the Ministry of Health in 2012. *This guideline is under review and a revised version is due for release by the Ministry of Health in late 2021*

Using psychometric assessment for purposes in which the psychologist is an expert witness

A psychologist contracted as an expert assessor may use psychometric assessment as an integral component of the information gathering. In the following circumstances, a psychologist performs a quasi-legal role rather than that of delivering a health service

- Family Court assessments
- forensic examinations
- cases involving litigation
- employment disputes
- assessments for disability support
- ACC contracted assessments to review benefit entitlement.

Avoiding conflicts of interest

The roles of therapist and expert assessor are likely to be conflicted. Therefore, a psychologist should avoid agreeing to be an expert witness or perform an evaluation for legal purposes in relation to a client they are treating. However, they may give evidence of the observed facts or a clinical opinion of their client, with the client's consent. A psychologist may not be able to keep the two roles separate when there are few with the necessary skills, and the clients have special needs, e.g. when the client is intellectually disabled.

Maintaining independence

A psychologist who is contracted to do an evaluation as part of a legal or quasi-legal process is answerable to the court, lawyer or contracting agency who engaged their services. However, this should not compromise the psychologist's professional integrity or independence. The psychologist should be careful to resist any explicit or implicit pressure to influence their professional judgement about an assessment from either the contractor or the subject of the assessment.

Confidentiality

Confidentiality may only be waived by the client or by a court order. Client information is typically considered privileged. Privilege in this context means that the confidentiality of information obtained as part of a therapeutic engagement is protected by the Evidence Amendment Act, No 2 1980 (sections 32(3) to 33(4)). Legal privilege for children and young persons is protected by section 77 of the Children, Young Persons and their Families Act (1989). By contrast, the expert evaluator reports prepared for a lawyer or the contractor are protected as privileged because the psychologist is preparing the material in anticipation of legal action.

The psychologist must tell the subject of a legal evaluation about the constraints to confidentiality and the intended use of the product of the assessment.

Differences between the roles of therapist and expert assessor

In their role as a therapist, a psychologist is a care provider. In contrast, the expert assessor must be neutral, objective and detached. Whereas the therapist is not so concerned about the historical truth of the client's perceptions, the expert evaluator may need to offer an opinion on the validity of the psychological aspects of the client's claims. This usually means verifying the client's reports against other information sources about the events in question by seeking collateral information, including from psychometric assessment.

The therapist–client relationship is based on the principles of aiming to help the client and doing no harm to them. The therapist develops a therapeutic alliance with the client and avoids actions which may disturb the relationship. In contrast, the expert evaluator's role is to gather and present objective information that allows a legal decision-maker to reach a just solution to a legal conflict or determination of entitlement. This may be detrimental to the legal position of the subject of the examination.

Providing feedback to the client

When completing an assessment as an expert assessor, the psychologist may need to check with the contractor or instructing lawyer whether there are any constraints on giving the client feedback. While it is usually desirable to give feedback, there may be prohibitions against this in some circumstances.

Describing the limitations of testing

When providing expert advice to a court or decision-making authority, psychologists should take care to describe the attributes and limits of a psychometric test accurately. They should also be careful not to go beyond their competencies.

Protecting the integrity of testing tools

In giving testimony, a psychologist must stay mindful of the confidential nature of the psychometric tools used and avoid releasing information about the nature of the test into the public domain. The confidentiality of the test material must be safeguarded, and the client data should not be given to unqualified persons who could release it without adequate interpretation. If the psychologist is pressured to supply information about the

tests, they should advise the court of the risk that the usefulness of the assessment tool may be lost.

Assessing the possibility of malingering

If the client has a clear incentive to be assessed as having a disability or condition, the psychologist should evaluate the possibility of malingering. DSM 5 defines malingering as "intentional production of grossly exaggerated or feigned symptoms motivated by an external incentive, such as obtaining financial compensation or evading criminal prosecution." It is no longer listed as a mental disorder but is instead a condition that may be a focus of clinical attention. Thus, while malingering should be considered whenever the veracity of a patient's self-report is called into question, a dubious symptom report, in and of itself, is not sufficient to diagnose malingering. Similarly, attempts to obstruct or derail evaluation or treatment due to poor participation, nonadherence, or vague or inconsistent reporting are not enough to determine the presence of malingering. To determine that a patient is malingering, the following conditions must be met:

- Symptoms are feigned or grossly exaggerated
- Excessive symptom production must be intentional
- The symptom production is motivated by an external incentive (eg, avoiding work or military duty or criminal prosecution, or obtaining financial compensation or drugs)

Assessments for the purpose of ACC or income protection insurers determining entitlement to benefits are examples where there could be an incentive for the client to exaggerate symptoms or feign disability. International best practice states that symptom and performance validity testing should be done routinely to demonstrate the risk of malingering has been actively considered[20].

[20] British Psychological Society (2009), National Academy of Neuropsychology (2005), American Academy of Clinical Neuropsychology (2009)

Purchasing tests

Psychologists can purchase tests from various sources, including NZCER, the test publisher, or other internet-based providers. The Board recommends that psychologists purchasing tests ensure that they have the level of competence recommended by the test supplier and take any training required to ensure they use the test in a competent and useful way.

Psychologists who wish to purchase tests through NZCER are required to register with that organisation. This will involve declaring their scope of practice, relevant training and prior experience. NZCER decides what level of test a psychologist is eligible to access. This controls access to complex tests as a safeguard against potential misuse. Most psychologists are likely to be able to access Level C and D tests, but this is not an automatic right.

Many psychometric instruments (particularly those used in human development and employment selection) are now available for purchase through the internet in an uncontrolled way. This may degrade the usefulness of some tests. While psychologists are bound by their professional obligations to maintain ethical conduct, others may not be so responsible. Psychologists must lead by example and demonstrate there is added value in having a disciplined, scientifically sound approach to an assessment which integrates (often complex) information to enable useful interpretations and application to the issue of interest. They may also need to educate stakeholders about the risks that may arise from the misuse of psychometrics.

Providing computer-based assessments over the internet

Online assessments are used for many purposes. They can be used for "high stake" scenarios in which important decisions rest on the outcome of the assessment (such as recruitment selection), through to "low stake" scenarios, such as test-takers satisfying their curiosity how they perform on a measure but where there are no foreseeable consequences of taking the test, and there may be minimal interaction with the psychologist. The test situation may range from being supervised, and password controlled, to being unsupervised and with no authentication of the identity of the test-taker.

Informed consent

Informed consent should include clarification of the limitations of internet assessment and if appropriate, the extent of the relationship with the psychologist who is administering the test. Backup phone and email contact information may be appropriate if a client requires further explanation of the intended purpose of the assessment and the potential outcomes of the assessment.

Consideration of whether online testing is appropriate for the purpose

Psychologists should assess the appropriateness of using internet-based testing as compared to a test delivered by an alternative method. They should consider the content of the test, the technical adequacy, and the validity of the test for the desired purpose. They should take particular care if the norms and technical psychometric data are based on pen and paper or face-to-face delivery.

Limitations to interpretation of online tests include

- the use of uncontrolled, and therefore less standardised, conditions
- being unable to ensure the true identity of the test taker.
- there may be less access to other observational information that could be used as collateral evidence to the test result.

Feedback to clients

Interpretations of online tests should be given in an understandable and meaningful form which is fit for the intended purpose and audience. Due to the difficulty of not knowing the impact of negative feedback on the client, or their state of mind, it may be appropriate for feedback to include directions on how to obtain support. This is

particularly important if the psychologist has no way to provide immediate support if the client has a negative reaction to the feedback.

Technical requirements

The online test must specify the minimum hardware and software to support the test delivery and also the browser necessary to deliver a test over the internet. The client must have the appropriate level of skill and comfort in using the technology for the results to be valid. Computer-based tests should not require knowledge, skills or abilities that are irrelevant to the attribute being measured as these other requirements could act as a barrier to performance on the test.

The administrator of an online test should have the technical understanding to set up the test and provide clear information so that the test-taker can log in and out of the test. Clients should have access to on-screen help while completing the test.

Using psychometrics in research

Psychometric research is necessary for developers of new or emerging psychometric tools.

Researchers using psychometric tests should maintain the same standard of ethical practice as psychologists working in other specialist areas. This includes abiding by copyright restrictions, such as not photocopying psychometric materials to avoid purchasing them. The copyright owners may also reserve the right to restrict usage to those with appropriate psychometric training.

Informed consent should include

- the purpose of the research
- how the individual respondent's data will be used and stored
- whether or not the individual can receive feedback or a report on the outcome of the research
- who is responsible for the research.

Individuals names or other personal identifiers should be removed from archived, stored research data.

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