



## **Guidelines on the use of Psychometric Tests**

**February 2013**

### **The purpose of the Board’s “best-practice” guidelines**

Practice guidelines recommend specific professional conduct for psychologists to educate and inform practice. Guidelines are recommendations rather than mandatory standards, but supplement the Code of Ethics which is the highest and most aspirational regulatory document.

The Code of Ethics (the **Code**) delineates the manner in which psychologists ought to carry out their practice. All other statements of how psychologists should or must conduct their practice must be consistent with this document and its ethical principles of respect for the dignity of persons, responsible caring, integrity in relationships and responsibility to society. Guidelines adopted by the Psychologists Board (the **Board**) support psychologists in providing competent and ethical practice by translating or expanding on the Code in relation to more specific aspects of their professional behaviour.

By integrating the principles of the Code and current specialised knowledge in an area of practice, the Board develops guidelines to support quality services for the benefit of consumers and to protect the public. It is incumbent upon psychologists to be familiar with any Board guidelines relevant to each area in which they practise. Guidelines are not definitive, binding, or enforceable by themselves. They have the least authority of any of the regulatory documents. However, a disciplinary body may use the guidelines in evaluating a psychologist's knowledge and competency. Guidelines that are relevant to a particular area in which a psychologist has chosen to practise help to define competent and skilled professional behaviour. Practice that is inconsistent with relevant guidelines may represent unskilled practice.

### **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. The guidelines do not attempt to inform the application of practice to each of the many specialised fields where psychometrics are used, nor does it attempt to research the literature pertaining to each of these specialisms. The guidelines have been informed by a distillation of ethical principles integrated with consultation submissions from experts throughout the psychology community in New Zealand. The submissions during the multiple consultations to guide the development of these guidelines indicate that some aspects of practice are controversial or that there is a wide range of opinion. These guidelines do not attempt to prescribe what should or should not occur but focus more on the generic ethical and professional use. The guidelines assume psychological training and expertise and are not intended to inform or train practitioners from other disciplines who would like to or do use psychometrics. Psychologists cannot directly control people from other disciplines who may also use psychometrics, but can offer leadership and expertise which may influence others towards good practice.

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## **Executive Summary**

Psychometric tests are structured and standardised assessment procedures which enable a psychologist to measure aspects of a client's functioning. The standardised administration allows comparison of that client with others who have completed the same assessment procedure. If the test has been developed on a similar population as the client then the test outcome may be considered a valid measure of that attribute. Psychometric tools vary in the degree of formality between structured observations, such as questionnaires, to prescribed tasks which are administered under carefully controlled standardised conditions. Predominantly these guidelines address the use of standardised tests by psychologists as applied to their practice with individuals.

The Executive Summary of the key principles presents the generic standards which may be expected to be upheld should it be relevant to a complaint or competence concern. The indexed sections that follow in the remainder of the document will allow a more detailed consideration for those interested in that particular topic. These more detailed sections often represent a range of opinions or issues. It is also acknowledged that the content may be very basic to those who are experienced but has been included because it has either been raised as an issue or a complaint or competence concern has illustrated that it cannot be taken for granted. These issues are raised as matters to take into account but are not intended to be prescriptive or define exactly how a practitioner should proceed. This will always be determined by professional judgement in the context of the formulation of the issues.

### ***Principles of use***

The use of psychometrics should ordinarily comply with the following principles. However there may be circumstances where deviation is justified.

#### **Principle 1: The use of the information**

Information derived from psychometric testing is usually collated with information from other sources to inform the assessment of a client, rather than being considered an adequate assessment in its own right. Triangulated information which is consistent may strengthen confidence in the test findings but conversely discrepant information may necessitate interpretation or further enquiry. Care should be taken to not place undue weight on the psychometric findings or to predict performance in another setting based on the test outcome unless there is evidence that test has predictive validity for performance in that other situation of interest.

#### **Principle 2: Competence to use that test**

Psychologists should ensure that they are competent and trained to use a test prior to using it with a client. The degree of training required will vary depending on the sophistication of the test but should enable the integrity of the standardised administration to be maintained and a well-informed interpretation of results made.

#### **Principle 3: Informed consent**

Informed consent should be gained from the client prior to the test being administered. The consent should define who has the right to receive this information. This consent should be in writing, particularly where the information is to be given to a third party.

#### **Principle 4: Justification for the test selection**

The psychologist should be able to justify the selection of tests. This may mean refining the referral question. Tests selected should be fit for the purpose required.

#### **Principle 5: Interpretation and the limitations of test information**

The psychologist has an ethical obligation to ensure that information arising from psychometric testing is not misused. Therefore there must be careful attention to interpretation and defining 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. Excessive exposure of psychometric tools to a client or allowing the client to become overly familiar with tests should be avoided to minimise practice effects and to preserve the utility of that test should it be needed to assess that client in the future.

**Principle 7: Follow administration instructions**

The psychologist should use the prescribed and standardised procedures to administer a test. Measuring functioning in this controlled way enables comparison of that client's performance with others who have been tested in the same way. Deviations from those 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 when administering tests. 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 attempt to explain why that is not optimal in a psychometric testing session (it may reduce the validity of the test results and may threaten the test integrity). If the client insists, the psychologist may choose to allow this and work to reduce the disruption as much as possible or the psychologist may choose to decline proceeding with the assessment.

There are other circumstances where the presence of a support person is necessary to enable the testing to occur, such as the need for an interpreter or where there is a need for emotional or physical assistance.

In judgements on allowing or declining the presence of a third party observer, a client centred approach should be taken and then any perceived constraint to interpretation stated when reporting the results.

**Principle 9: Cultural safety**

Psychometric tools used with New Zealand populations commonly use normative samples from other populations. Test results should be interpreted with this limitation stated if applicable as populations from different cultures may have systematically different test profiles.

**Principle 10: Release of psychometric data**

Psychologists should release the interpreted results only to those who have a legitimate right to receive that information. Interpreted results take in to account any constraints on the validity of the test results and have been integrated with collateral information and observations. Raw data should not be accessible by those who are not trained to interpret it and by those who do not have consent 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 and who could assist in any interpretation.

**Principle 11: Reporting results**

Reported results should be fit for the purpose and targeted at the objectives of the assessment. In both written and oral feedback, the limitations of the assessment should be communicated and the results presented 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. Differential hypotheses or diagnoses should be considered, avoiding bias or foregone conclusions towards predicted outcomes.

**Principle 13: Assessing for third party**

When assessing under contract to a third party, the psychologist has an independent expert role, and therefore should take care to not be influenced by the contracting organisation to produce or confirm a preconceived outcome. Conversely the psychologist is not an advocate for the client. The consent process should make explicit to whom the report belongs and with whom the information will be shared. The consequences of choosing to not participate in the assessment as well as the possible outcomes of the test results may also need to be discussed.

**Principle 14: Confidential storage of test data**

Psychometric test data should be stored in a secure and confidential manner. The test data should not be accessible to those who are not trained to interpret and should be viewed only by those who have consent from the client to access. In accordance with the Health (Retention of Information) Code, 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 tests should be protected from unauthorised access to preserve copyright restraints and to avoid misuse of the tests (to the extent that the psychologist has control). The contents of tests should be safe-guarded. It is acknowledged that the proliferation of information about psychometrics in the public domain, particularly through the internet may compromise this intention.

**Principle 16: Use of psychometrics by those in training**

Psychometric tools should only be used by those in training under close supervision. The consent gaining process should make transparent the status of the trainee and that the supervising psychologist is accountable. The accountable psychologist has a duty to ensure that standards are not compromised.

**Timelines for review**

It is recognised that the use of psychometrics is constantly evolving. These guidelines will be regularly reviewed. Therefore any aspect which is considered outmoded or to inaccurately represent current "best practice" should be drawn to the Board's attention and these guidelines can be updated. Once finalised it is intended that the guidelines will be reviewed routinely at two year intervals.

**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. It is normally designed to be administered under carefully controlled or standardised conditions that include systematic scoring protocols. The psychometric test provides a measure of performance which allows inferences about the individual to be drawn based on that sample of behaviour, as it allows comparison with a larger population. Psychometric tests may also allow classification or the placement of individuals within a range of possible measures.

Psychometrics are used in a wide range of settings to assist psychologists to understand and predict behaviour, then to use this information to make decisions and guide future action. For example, in an occupational setting the psychometrics may assist selection for employment placement or the trajectory of development within an organisation. Educational evaluations and resource allocation may be informed by testing. Within a

clinical setting, psychometrics may be used for a wide range of purposes including diagnosis, clinical decision making and prognosis. Neuropsychologists offer expert assessment using psychometrics to diagnose and assess functionality where a client is hypothesised to have a brain dysfunction or neurological disorder.

In most situations the psychologist would use tests to supplement other information gathered, rather than using psychometrics as the only source of information. By using a standardised test, the psychologist is able to add structured information to the informal information gained from other sources such as interview and observation. Psychometric questionnaires may be used as a systematic and efficient way of gathering information and/ or screening to assist triage and to identify areas for in-depth investigation. Carefully selected psychometric tools may hone in on aspects of functioning to identify aptitudes and abilities, to inform diagnosis or to predict performance on correlated real-life tasks.

### **Safe and ethical use of psychometric assessment procedures**

Psychologists must only use test instrument that they are competent to administer and interpret, unless working under the close supervision of professionals with appropriate training and experience. The qualifications specified by the test's producers or in the test manual must be complied with. The training required to enable competent administration of a test will vary depending on the complexity of the test.

The psychologist should gain informed consent prior to undertaking the assessment and only report the results to those whom the client has given permission to inform and who have a right to know. This is discussed more fully in a later section.

Consistent with normal professional practice, psychologists are accountable for the contents of any report that they sign. Psychologists must select appropriate assessment instruments and procedures for the objectives of the assessment and should be able to justify the selection and interpretation of tests if required.

Psychometric testing should occur in a structured and controlled environment. It is not appropriate to give the client the test to take away to complete elsewhere. Such uncontrolled administration would open up possibilities of the client taking advice from others how to complete the test and reduce the test security. Furthermore, the testing process may elicit reactions in some clients which are best observed and addressed.

Psychometric tests vary in the rigour with which they have been developed. A psychometric test should be valid (the degree to which evidence and theory support the interpretations and relevance of test score in the proposed use of the test), reliable (that is, the consistency of measurements obtained on a test when the testing procedure is repeated on a population of individuals or groups) and sensitive (able to differentiate with regard to the attributes of interest)<sup>1</sup>. Test measurement presupposes that individuals exhibit some degree of stability in their behaviour and the attributes of interest. However repeated measurements will show some variability which can be referred to as measurement error around a hypothetical "true" score. Errors of measurement will consist of random and unpredictable errors as well as potential systematic errors, for example a client with high test-anxiety may systematically underperform which introduces a construct-irrelevant variance. A distinction can be made between measurement error which arises within a client and those arising from external factors, such as changes on the administration or unintended distraction. In a repeated assessment situation a change in score from one occasion to another may not be considered an error of measurement but may be hypothesised to arise from an intervention or healing or other process. In this situation the reliability of this observed measure is of interest. Whatever the test situation, the confidence that can be placed on the test outcome should be commented on as it is essential to an interpretation of a

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<sup>1</sup> Refer to Eatwell, J. and Wilson, I. (2007) for a full discussion of the psychometric qualities of tests.

test result<sup>2</sup>. Reliability and validity are not independent constructs as high error measurement will inevitably reduce the validity of the resultant measures.

A more rigorous test is one that has been shown to be valid with reliability when tested against a larger sample and preferably a wider normative population that could reasonably be considered as representative of the population from which the test-taker is drawn. A constraint on the interpretation of tests used on New Zealand populations is that there are few tests which have been developed and validated against New Zealand populations. Therefore the normative data which the New Zealand client is being compared with may be based on a limited sample of the population from the country in which the test was developed.

The type of measure<sup>3</sup> used determines the comparisons that the test enables. The type of questionnaire, will determine the nature of the information generated, ranging from structured interview data to classification into categories. Percentile scores or ratings allow an ordering that indicates how that individual has scored compared to the comparison group, and are generally easily understood by laypeople. However a cautionary note is that 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 whereas standard scores have been transformed to reflect variations with respect to a specific group on a specific test, in terms of standard deviation from the mean.

The results of assessments may have a substantial impact on the client. Therefore it is important that psychologists 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.

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 to allow the reader to judge with what authority the psychologist speaks.

### **To uphold the highest standards of accuracy and fairness when administering tests**

A key question pertaining to 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 may be advised to discuss the referral question with the referrer to clarify the objectives of the assessment before planning the assessment. The referral question may not be appropriate or answerable in the form it is initially presented. The psychologist should resist pressure to provide statements on causation or draw inferences beyond the evidence. The psychometric assessment only provides a snapshot of the functioning of the client at the time of the assessment and therefore does not substitute for a formulation about that client based on much broader and triangulated information from multiple sources.

Decisions about testing should be based 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 have validity for measures that correlate well with the occupational competencies of interest and be pitched at an appropriate level of difficulty to differentiate between individuals on the target attributes of interest.

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<sup>2</sup> AERA, APA, National Council on Measurement in Education (1999)

<sup>3</sup>O'Connor, F. (1993)

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 which are then tested by gathering data to support or disprove. Psychometrics used for this purpose should be carefully selected to inform the constructs of interest. The advantages and disadvantages of using any particular test within a proposed assessment strategy should be carefully considered so that there is a reasoned justification for the use of any one test.

Care should be taken when reporting the results of tests when the client is intellectually disabled. For example reporting age equivalent scores for adults with developmental delay may be misleading unless carefully interpreted as the person has life experiences and biological development matching their chronological age.

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 openness. This will be promoted by the client understanding the purpose of the assessment and perceiving the assessor as professional in their conduct. A professional approach in this context would require the assessing psychologist to be respectful, friendly and seek to put the client at ease but also to be perceived as neutral and unbiased. The psychologist should not be overly familiar or negative. If a client is observed to be anxious, distrustful or unmotivated, this should be noted as a constraint on performance which can then be taken into account in the interpretation.

An individual may be given multiple tests at one time. Optimally these tests should be carefully selected to answer specific clinical questions pertaining to that client. Administering a standard set of tests, often referred to as a "battery" of tests, increases the risk of "over-testing" the client, thus reducing the usefulness of any future assessment of that client. The psychologist will be guided in their selection by the specific hypotheses or lines of enquiry for that client and the purpose of the assessment, for example whether the assessment is directed at information gathering, triage, predicting future performance in a role, comparison with peers, cognitive screening, a comprehensive psychological assessment to build up a profile of abilities and weaknesses, or some other purpose.

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. Ideally an assessment proceeds using the least intrusive way to gather information available, keeping the psychometric testing to an optimal level (which may mean keeping it to a minimum). The value of having working hypotheses has to be balanced with the need to keep an open mind to avoid bias and predetermination.

Any test selected should be fit for the purpose for which it is intended, both with regard to the use for which it was designed and validated, and for 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. If the norms for a specific test are to be used, the directions and instructions specified in the manual must be strictly followed to enable the results to be compared to the results of others. If there is reason to vary the administration of the test, this should be fully recorded with the rationale for this variation. It is recognised that under some circumstances tests may be altered in how they are administered because of the clinical situation. The potential impact of the variation on the scores should be noted and allowance made in the interpretation of results. The psychologist should also be alert to possible constraints on interpretation, such as where a client may vary from the test's normative group (e.g., by ethnicity, age, disability, gender, or other attributes).

If the client has been assessed previously, the psychologist should be alert to the possibility 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 statistically allowing for this.

Sources of unintended distraction should be removed prior to starting the assessment session, including turning off cell phones and pagers.

Psychologists should ideally use the most current version of a test, unless there is a particular clinical reason for using an earlier version. Clients should be welcomed and briefed in a manner that alleviates anxiety. If the client continues to show anxiety, appropriate assistance may need to be 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**

Psychologists must gain informed consent from a client before proceeding with a psychometric assessment. In accordance with the Health Information Privacy Code and the Privacy Act, this means informing the client 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 constraints to confidentiality should be explained at this time. If the report is being prepared for a third party under contract, it may not be possible to state who will have access and for what purpose the report may be used other than in general terms.

Gaining informed consent may include discussing the consequences of taking, versus not taking the test, so that an informed choice can be made by the client. For an intellectually disabled client this may mean talking through possible consequences of being found incompetent. By informing the client of potential risks and benefits arising from the assessment, the client is able to exercise their right to choose cognisant of likely consequences. The psychologist should be alert to any limitation of a client's capacity to give or decline consent, including medical or mental diagnoses, physical or cognitive incapacity, language or cultural barriers.

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 subject of the assessment is a child of separated parents, informed consent should ordinarily be sought from both parents, but if this is not possible, 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.

In accordance with the Privacy Act and the related Health Information Privacy Code, psychologists seek to collect only that information which is germane to the purpose for which informed consent has been obtained. The consent is likely to be specific for the time period and the situation in which the assessment occurs. If circumstances change, if there is a significant lapse in time, if additional parties request a copy of the report, or if the report is to be used for a different purpose than initially consented, further written informed consent should be sought.

The parties who may legitimately receive the test results should be clearly identified. The psychologist's ethical obligation to ensure the client gives informed consent for the

release of information about them extends to situations where there is a request for a report or psychometric results arising from an historical assessment. Generally only interpreted results should be released, once the appropriate consent has been obtained and should not be communicated to anybody else without the prior informed consent of the client.

## **Interpretation**

Psychologists should interpret test scores in conjunction with other collateral information, such as information from interview, information given by relatives and friends, observational data and previous assessment reports. Far reaching conclusions or diagnoses which have high impact on the client's life should not be made on the basis of a psychometric test or a one-off assessment. Reasonable alternative explanations for the results should be considered.

Constraints on the assessment that may affect the interpretation of results should be stated. There are multiple factors that can compromise a client's performance on a psychometric test including factors such as the client's mental state or physical state, side effects of medication, language or cultural barriers, educational limitations to understanding, the testing environment, the interaction with the tester, fatigue, and the client's recent and historic 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. Where constraints have been identified, these should be recorded and allowed for in the interpretation of results.

If the same psychometric instrument has been undertaken by the client previously, 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.

Computer-interpreted test results or a computer generated report is not adequate alone as an assessment report. The psychologist has a responsibility to evaluate the computer based interpretation of test performance or the computer-generated report in the light of additional information, clinical observations, and other known data about the particular client.

The psychologist should report derived scores, such as standard scores, percentiles and age-equivalents with care to mitigate any risk arising from use or misuse by readers who lack understanding or training in the use of psychometrics. For example, these measures may be regarded as more fixed and enduring than what is appropriate. Cautions about the limitations on the reliability and validity of such scores should be explained.

The psychologist should avoid over-generalising the results of one test to traits or characteristics not measured by the test. The extrapolation of that result to predict success in real life situations, such as academic success, current and future employment status, performance of daily living tasks, medication management and ability to drive should only be done if it has been established that test result is predictive of those daily functions, or that performance on that test is highly correlated with performance in some other setting.

## **The use of symptom validity testing, reliability and dissimulation**

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 on which it draws, including the client's motivation to adhere to the test requirements. Effort or motivation indicates the client is performing at their capacity, demonstrating a willingness to comply with explicit or implicit instructions with regard to speed, accuracy or other performance

requirement. It is not uni-dimensional, but is a concept which may be assessed and inferred from observations of behaviour. Optimally a client demonstrates his or her best effort in a testing situation. Effort can vary from poor to outstanding as part of natural variation. In gaining informed consent, it should be explained to the client that they should perform to the best of their ability and that tests of effort may be included in the assessment if applicable.

In any assessment in which there are known advantages or potential advantages to a client presenting him or herself in a particular way, then the psychologist should consider and comment on this 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.

Symptom validity testing, also known as effort testing, is intended to give reliable and valid indices which are sensitive to distortions in motivation. A<sup>4</sup> distinction can be made between effort tests in a cognitive assessment context, which is assessing performance validity (such tests clarify the extent to which a client's test performance is or is not an accurate reflection of their actual level of ability) whereas the term symptom validity more specifically refers to the accuracy of self-reported symptoms as, for example, elicited 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.

Opinion on the routine inclusion of such tests is divided. Some psychologists advocate that it is "best practice" to include effort tests routinely as part of a clinical assessment of cognitive function, particularly where clients are involved in litigation or claiming financial benefits for disability, and that failure to assess this would need to be justified. In this context it is argued that effort testing both indicates the validity of the assessment and also may protect the client from unfair criticism. Decisions with regard to the allocation of treatment, rehabilitation, financial support or medication or culpability in a legal context may be based on the test results. Research has shown that external incentives can be influential on performance.

If psychometric tests are used to specifically assess effort during a cognitive assessment, these tests should be dispersed throughout an assessment. The following ethical considerations<sup>5</sup> apply:

- Only well researched effort tests should be used. The selection may need to be guided by client disability.
- Multiple effort tests should be used to reduce the likelihood of false positive diagnosis of poor effort. Research<sup>6</sup> has suggested that using more than one performance validity tests reduces the incidence of false positive errors.
- As with all psychometric assessments, performance validity testing must be undertaken with careful attention to administering tests in standard ways and noting any constraints on interpretation.
- The psychologist should 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 over more than one day, the psychologist should be alert to the possibility that the motivation to succeed may fluctuate. If effort tests are used, they should be distributed throughout the testing sessions.

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<sup>4</sup> Larrabee, 2012.

<sup>5</sup> Iverson, 2006, 2007.

<sup>6</sup> Cited by Larrabee (2012)

- The psychologist should also examine performance patterns to ensure they make biological and psychometric sense.
- The clinical inference of depressed effort should be made on a convergence of evidence rather than simply one or more effort tests alone.
- 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.
- An effort test only shows behaviourally there was poor performance on that test but this may occur for various reasons. The assessing psychologist should consider all reasonable possible differential diagnoses or explanations for the observed behaviour, and list the evidence for each of these alternative explanations.
- Conclusions should be stated explicitly and clearly. Psychologists have an ethical responsibility to report assessment results fairly, accurately and objectively. Referring to the client's assessed inconsistent motivation in critical or pejorative terms is to be avoided as to do so would be likely to breach the Code of Ethics.

The assessment of performance validity requires considering the pattern of performance across multiple measures. One approach which has been widely accepted gives an operational approach to diagnosing that poor effort has been applied.<sup>7</sup> Specified criteria are that there is an external incentive clearly identified, a negative response bias, and that behaviours cannot be accounted for by psychiatric, neurological or developmental factors. The evidence for the negative response bias would be 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; discrepancy between test data and known patterns of brain functioning; discrepancy between test data and observed behaviour; discrepancy between test data and reliable collateral data; and 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.<sup>8</sup> The self-report data is also considered for discrepancies with other information gathered and for indications of exaggerated psychological dysfunction.

If a psychometric test indicates that less than optimal effort has been applied or has been inconsistently applied, the first question is "why?" This question may not be answerable. There are various factors<sup>9</sup> which may contribute to a client demonstrating poor effort in an assessment situation, i.e. poor performance validity, including dementia states with fluctuating attention span, sensory or motor impairment, abnormal arousal states, severe psychiatric disorder, poor communication or understanding of the demands of testing, and physical factors such as musculoskeletal injuries (e.g. peripheral neuropathy). However effort tests are designed to be very easy and performance is not easily affected by other factors. Clients with diagnosed neurological conditions often still show performance levels in the valid range of performance validity tests. Test performance<sup>10</sup> has been shown to be not affected by pain, fatigue, psychiatric disorders or depression and anxiety states.

A conservative interpretation is that low effort on one part of the test series may indicate all other results are under-representing the person's abilities. It also means 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.

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<sup>7</sup> Slick, D. et al (1999)

<sup>8</sup> British Psychological Society, 2009.

<sup>9</sup> British Psychological Society, 2009.

<sup>10</sup> Research cited by Larrabee, 2012.

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, may (falsely) attribute pre-existing symptoms to an accident, report a higher than actual pre-morbid level of functioning, catastrophise current symptoms or have difficulty reporting current functioning accurately.

Distinction 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).
- 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.

In assessments carried out for clinical and rehabilitation purposes, there is an obligation for the psychologists to provide feedback to the client even when there is lack of effort detected on cognitive measures and/or an exaggeration of emotional and behavioural symptoms is hypothesised. This discussion may lead to clearer identification of the reasons for underperformance or exaggeration of symptoms which can then be targeted in therapy/rehabilitation. For example, 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

The interpretation of psychometric results is based on the test being administered in a standardised way to allow comparison with the normative population who have also all undertaken the test in the same standardised manner. These standardised conditions are likely to be compromised by the presence of a third party observer (**TPO**). As a general principle, wherever possible the standard conditions should be preserved. 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 and there may be client presentations where testing is enabled by the presence of a TPO.

In accordance with Rule 8 of the Code of Health and Disability Services' Consumers' Rights, a health consumer may request a support person to be present. Although there are some exceptions to this right (specifically, if safety may be compromised, another consumer's rights may be unreasonably infringed or if declining the request for a support person is reasonable in the circumstances), this rule has been interpreted by the Office of the Health and Disability Commissioner as meaning that the subject of an assessment does have the right to expect a support person to be present during psychometric testing. As the Code of Rights has legal status which overrides the Board's Code of Ethics, this rule supersedes the ethical obligations of the psychologist to avoid having a TPO present, should such a challenge be made to what is deemed best practice for a psychologist assessor. If a client is requesting that a support person remains present during psychometric assessment, the psychologist assessor should attempt to engage the client in a collaborative relationship and explain the disadvantages of having an observer-support person present. However if the client is not persuaded, their right to have a support person prevails. The psychologist may decide to decline to conduct the assessment rather than compromise their practice.

The greatest validity is to be obtained when the client is motivated to cooperate with the assessor to perform in an optimal manner 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, and may distort the response to test items by the distraction both from the physical presence and the internal processes stimulated by the awareness of the TPO's presence.

The effects of an observer being present on the client's performance is likely to vary depending on the nature of the assessment, the purpose for which it is to be done, 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. Furthermore 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 pertaining to individual tests to gain an understanding of the evidence on the relative sensitivity to a TPO being present. Individuals will be more or less sensitive to these observed effects. 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 they consider others are observing so that interviews may produce less information in that circumstance.

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.

The request to allow a third party observer may arise for a variety of reasons, including (but not limited to) 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, or there may be a desire to record a session as part of gaining evidence for legal purposes. There may be circumstances where the presence of a TPO is deemed necessary to make the assessment situation accessible. In these situations a client centred approach should be taken. 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 (but are not limited to) 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, or an assistant who is able to facilitate physical accessibility.

In the many situations where the benefits of having a TPO present outweigh the prohibitions about doing so, then the psychologist should document their reasons and rationale, including the client's consent and preferences. Ways to minimise the impact of observation on the validity and fairness should be carefully considered. 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. If the TPO needs to be more actively involved, their participation should facilitate but not undermine or impair 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. Where there is variation from the standard conditions, this should be documented and allowed for in the interpretation of the results.

As a profession it behoves all psychologists to continue to educate non-psychologists 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**

Optimally a psychometric test is used that has been developed and shows validity for measuring the attribute of interest in a population that fairly represents the client. Relevant comparison groups provide a normal distribution with which the individual's score can be compared. It is essential that the normative group used is 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. It should be noted that few psychometric instruments have New Zealand normative standards available. One group of researchers who developed New Zealand normative data for the Rey Complex Figure Test found a number of significant differences between their results and the American standardisation data, but no overall ethnic differences.<sup>11</sup>

There is a paucity of research on the validity of psychometric instruments used with various cultural groups but three research studies illustrate the ways interpretation could be misleading. Research<sup>12</sup> has shown that for example 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. Secondly, administrators of the SF-36 health survey could assume that all cultures interpret the health questions the same way but research<sup>13</sup> has shown that Pacific and older Māori conceptualise their health differently. Research<sup>14</sup> 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

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<sup>11</sup> Fernando, K., Chard, L., Butcher, M., and McKay, C. (2003)

<sup>12</sup> Ogden, J. and McFarlane-Nathan, 1997 cited in Ogden, J., 2007.

<sup>13</sup> Scott, K. et al, 2000.

<sup>14</sup> Faleafa, M., 2009.

but that the years of education and English as a second language were confounding factors in interpreting the psychometric data. There were other cultural differences between the groups in their psychological outcomes.

These three studies are illustrative of the principle that psychologists should be alert to the cultural bias of tests if they have been developed and normed for a different cultural population. Meaningful differences in performance can be found between the average performance of different ethnic groups or between men and women, raising the possibility of adverse outcomes arising if the test results are used for decision making. These examples suggest that differences between cultural groups may not be intuitively obvious.

Differences in performance may arise from factors including, but not limited to, differences in socio-economic conditions impacting on educational opportunities, where the language of the psychometric tool is different from the native language of the test taker, or discomfort/ perceived threat in the test situation. There may be differences among cultures in familiarity with language used or images used in test items. Simply translating the test into the client's native language may not render the test valid as there may not be cross-cultural construct equivalence.

Where it is not possible to use psychometrics with normative data matched to the client and it is not possible to provide a psychologist who is culturally matched with the person to be assessed, attention should be given<sup>15</sup> to make 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 to assess pre-morbid and current abilities, including the observations of others, as well as work and education records. Tests which rely heavily on formal western education and include culturally alien concepts should (optimally) be avoided where assessing Māori or Pacific peoples until the cultural bias pertaining to various tests is 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<sup>16</sup> and dimensions of Māori identity and cultural engagement.<sup>17</sup>

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**

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. Furthermore, 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 to the report arising from a contracted assessment. Complex or potentially litigious reports should be reviewed in supervision prior to release as a safeguard for the psychologist and the client. Psychologists who are in training or at an early stage of their practice may also be advised to review all assessments routinely.

The discussion of the results should be directed to 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, poorly directed review of

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<sup>15</sup> Ogden, J. 2007.

<sup>16</sup> Thomas, D. 1988.

<sup>17</sup> Houkamau, C. And Sibley, C.2010.

functioning. Interpreted results would ordinarily explain the test outcome integrated with other data, any limitations or constraints pertaining to the outcome, and also give either the confidence with which the results can be considered (sometimes expressed as a confidence interval) or likely reliability of the measurements. The test outcome is likely to compare this client with others on the attribute or measure of interest.

If the assessment has been conducted in an organisational or employment setting, the purpose of the assessment and to whom the results will be made available should be established in the consent gathering phase, and then the focus and range of reporting of results previously agreed and consented should be carefully adhered to. 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 such as stating the limits of the use of the test, whom to contact should fuller information and interpretation be required, and to assure the client and the contracting organisation that the original test material has been stored securely.

In a health setting, the psychometric assessment should add value to the treatment and management planning. The report should give a good summary of the functioning as measured by the assessment and whatever recommendations arise from that assessment to improve the rehabilitation or quality of life of the person. If the report is within an educational setting, caution should be exercised. 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 development occurs. In both health and educational settings, any diagnosis or labelling of a client should be made with caution as this potentially stigmatising action can have wide reaching impacts and potentially may be destructive. The reporting of results for an intellectually disabled client needs to avoid misleading age comparisons as the chronological age is likely to not match developmental profiles.

Oral feedback to a client should be presented in a constructive and supportive manner, using language which is understandable for the audience. The results of a psychometric assessment should acknowledge the limitations and constraints to 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 also 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.

Psychologists have an ethical obligation to strive to ensure assessment results are understood and used only for the purpose for which consent was obtained. This may become difficult to uphold if the information is given to a third party organisation or contractor. As much as possible the constraints on the control over the use of the information should be explained as part of obtaining informed consent at the beginning of the assessment.

## **The potential risks in the use of tests and how those risks can be mitigated**

When completing an assessment, a psychologist reports on sensitive information in a manner that may have profound and long lasting effects on the person who was assessed. It behoves the psychologist to strive to conduct the assessment 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 a long lasting decision is to be decided on the basis of the assessment, then a high standard of validation of the results should apply.

Care should be taken to consider differential diagnoses and lines of enquiry when interpreting results of assessments. Mental health factors such as depression, anxiety and thought disorder may contribute to current functional impairment. Wherever possible information should be sought from multiple sources including self-report, behavioural observation, rating scales, clinical interview, interviews and reports from collateral sources of information (such as family, friends, employer, other clinicians). The assessment data should optimally inform of the duration of the presenting problems or abilities as compared to pre-morbid functioning.

Confirmatory bias is a phenomenon observed when psychologists differentially seek and assign weight to supportive evidence at the expense of plausible, alternative explanations for the obtained test results. For example, a psychologist may attribute working memory, psychomotor and executive deficits to a historic mild traumatic brain injury while ignoring a pre-accident history of learning problems and past and on-going problems with substance abuse. Alternately an initial impression may lead the psychologist to have a low threshold for information that supports initial working hypothesis, while ignoring, discounting or minimising data that leads to a different interpretation. All possible hypotheses need to be entertained and examined.

Psychologists also need to be aware of the scatter of tests scores in normal healthy children and adults, especially the prevalence of low scores. This will help psychologists to avoid relying excessively on isolated low test scores when formulating professional opinions.

The psychologist may be biased by a desire to be an advocate or 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 by predetermining the nature and content of the assessment (rather than the psychologist exercising his or her own professional judgement). Conversely the client may place strong 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 draw up a formulation based on the assessment results. Similarly while the contractor is entitled to spell out the questions to be addressed in the assessment, the psychologist should retain the right to choose the most professionally appropriate way of proceeding. The psychologist may need to make transparent to the client the independence of his or her professional opinion.

A psychometric assessment may be misleading if there is insufficient attention to the constraints on interpretation. Normally an assessment is a multistep process which includes integrating and comparing information from the background referral data, an interview with the subject of the assessment, behavioural observations, and collateral information gained by interviewing significant others which may include reports on functioning in other settings. Discrepant or inconsistent information may need to be investigated further or may prompt repeat assessment after a period of time.

Repeat assessments may cause the subject of the assessment to be overly familiar with the tasks required in the assessment. Some tests are more susceptible to practice effects which could be predicted to boost performance.

Relationship with the assessor may act as a constraint or limitation on the person's ability to comply with an assessment.

## **Keeping psychometric records**

Psychometric test results, consisting of both the raw data and the interpreted results, should be safeguarded to preserve confidentiality and to avoid those who are not trained to use them in a manner that could be misleading. Raw data arising from psychometric assessments should be retained in a secure file. In an organisational or

health service setting this is likely to require that the psychologist keep psychometric assessment records in separate, secure filing systems rather than including them in the client's main personal or health records (which may be accessed by other professionals and non-professionals). In some settings it may be appropriate to keep the psychometric records on the main file in a sealed and labelled envelope.

In accordance with the Health (Retention of Health Information) Regulations 1996, all client records must be retained for ten years minimum from the date of the latest client contact. Client records include the raw data from psychometric assessments.

Test results used for research purposes should not identify the test subject by name. Names and personal identifiers should be removed from databases of results that have been archived for research purposes or where the data has been used for the development of norms.

Should a client undertake repeated psychometric assessment, it is highly desirable that the psychologist assessor has access to the results of the previous assessments for comparison. Psychometric records could be released to the psychologist concerned with the client's permission but raw data should not be released directly to the client or any other untrained person.

## **Responsible use and the protection of the intellectual property of tests**

Psychologists should protect the security of standardised and controlled tests where possible. This includes respecting copyright restraints and preventing unauthorised access to psychometric instruments. It is acknowledged that the ability to control the distribution and access to standardised tests has been considerably compromised by the wide dissemination of information about tests on the internet. Professional reference material, conference presentations, advertisements promoting the use of specific tests by distribution companies, YouTube clips and training videos are sources of information that a motivated client could access to pre-empt an assessment.

Test users who are not trained or lack the requisite skills may use tests inappropriately. Where necessary, psychologists may need to 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, other professional colleagues who are not trained in psychometrics may request the right 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 and the possible generation of misleading information. 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 those who have had appropriate training.

Ordinarily, audio and video recording should not occur when psychometric measures are being administered in order to protect the integrity of the tests 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, and can also allow effort measures to be easily identified by people who may later use this information in a manner unintended by the test developers. For example, if the content of performance validity measures became widely known, then they may become invalid indicators of effort. Clients may request a recording to be made of an assessment, for example as a memory aid or to refer to later should there be a dispute over the outcome of an 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 by avoiding the contents being common knowledge and thus ensuring its continued usefulness. There is also an ethical obligation to protect the intellectual property of the psychometric tools. The psychologist should be alert to the use of Smartphone and other technology which may enable a client to record a test situation in a covert manner.

There may be circumstances where sound ethical reasons for recording may be established, such as for teaching and training purposes, for research, for quality control purposes and as part of the development of psychometric instruments. In such circumstances, ethical practice would be safeguarded by attention to consent processes, safeguarding of the recording, documentation of the rationale for the action taken, plus transparent consideration of the risks and any risk mitigation.

In a situation where assessment data needs to be made available, such as in a legal dispute, a complaint investigation or a competence review, then the test materials should only be made available to another psychologist. If the psychologist is put under legal pressure to release raw data to a non-psychologist, the practitioner can decline the request. This may lead the applicant requester to ask a judge to evaluate the relative worth of 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. The 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 perceived risks arising from the release should be mitigated as much as possible. If a psychologist is unsure of his or her legal right to withhold psychometric data, it may be advisable to 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 impair their usefulness.

## **Training in the use of psychometrics**

Psychologists should be both knowledgeable and experienced in the use of a specific psychometric test before employing it with clients. Specialist training for a particular test may be required and where appropriate the psychologist should also do refresher training.

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 both 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 prior to purchasing a particular test.

- Skills for specific assessment procedures and instruments, including the standardised conditions pertaining to the administration of a particular test.
- Ethical and legal issues about the use of tests, the reporting of the results and the secure storage of 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 pre-requisite training and psychometric knowledge which is deemed necessary to enable the psychologist to use the test competently and ethically.

## **Use of psychometrics by students during training**

Students who are being trained in the use of psychometrics must be closely supervised by an experienced and qualified assessor. Students should not be able to access or purchase tests directly but may do so under the supervision of the responsible psychologist who remains accountable for any assessment and for the test security.

The obtaining of informed consent should include explicit information about the training status of the assessor and also should 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 unduly compromised or reduced in quality by the student undertaking the administration. Particular care should be taken in situations involving subjects who may pose additional challenges, such as the assessment of children and with the verbal feedback to the client and their family. The report on the assessment should be countersigned by the supervising psychologist.

The student should be well informed on the theory and statistical properties underpinning the test prior to 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**

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

The assessment 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. 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 where the child has a disability. Concerns<sup>18</sup> raised about the use of standardised norm-referenced tests with young children include the following reservations:

- 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

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<sup>18</sup> Macy and Bagnato, 2010.

young children who are likely to seek to explore their environment and have limited interest in staying still or attending to adult controlled tasks.

- 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, other assessment methods such as direct observation in natural settings and structured interviews should be used.

The Ministry of Health <sup>19</sup>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.

Infants and children should always be supported 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.

When assessing a child a wide range of other factors may impact on performance and should be commented on. Internal factors that should be considered include illness, effects of medications, nutritional states, hunger, sleeping habits, physical mobility, motivational interest level, anxiety, stress, and the ability to self-regulate internal and external worlds. External factors may also be very influential, including the duration of a test taking session, heat, cold, noise, the time of day, family expectations and 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 if the child is 6 years and under, or those who have attention difficulties are best seen in 1 hour sessions before midday. It may be optimal 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 back to normal health.

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

Overly simplistic interpretation of score results may at best not provide helpful or developmentally accurate information, and at worst may be potentially damaging and significantly inaccurate. 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 a number of different explanations.

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<sup>19</sup> Ministry of Health "Operational Guideline for the Assessment of Intellectual Disability to Access Disability Support Services" page 9

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 initial and possible on-going distress of the caregiver following the discussion of results?
- Will the assessment results be used to inform the intervention plan?
- Do those to whom the results will be reported fully understand the limitations of such an assessment?

Use of 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 regulated. They must be properly trained and supervised and have sufficient experience to ensure they can elicit the best performance from the child and communicate appropriately with parents regarding the child's performance.

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.

### **Special issues related to assessing adults with an Intellectual disability**

Informed consent should also 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/or objects. The psychologists also need 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, even with more accessible information provided, then consent needs to be sought from a person legally allowed to provide this on their behalf; this would generally be an appointed Welfare Guardian. Where 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, and therefore no formal consent from the client is required.

Assessors should note that many psychometric tests did not include adults with intellectual disabilities amongst the population they based their norms on. This reduces the validity of these tests for this population and therefore results need to be interpreted with this in mind.

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

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 and thereby affect the speed the person can complete the task and therefore 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.

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) and an assessment of adaptive daily living skills, as well as 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 have a negative impact on a person's current abilities and subsequent assessment results (such as current mental health problems or head injuries).

The 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). 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 than this outcome being attributed to mood or malingering.

Clients are often used 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 a way for the client to indicate they need a break, such as by raising their hand or tapping the desk, before starting the assessment to help empower those who are too shy to ask directly.

Individuals with an intellectual disability may benefit from having a support person present during their assessment and have the right to do so as long as it does not pose any risk to the client, 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. As with any third party observer, it should be stressed prior to the assessment that the support person should not interfere with the testing in any way and is best positioned seated out of the client's direct vision.

Some assessment instructions may need to be simplified to allow clients to understand what is required of them. All clients should first be given the standard instructions and then have the opportunity to report whether they understand them or not. Any required changes need to be in keeping with the original intent of the instructions and not provide 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.

An open-minded approach to neuropsychological diagnostic assessments may be helpful so as not to bias interpretation of results. If the assessor already holds particular hypotheses then this may influence the chosen assessments and the way the test behaviour and data are understood. Further it is worth recognising that an existing diagnosis of intellectual disabilities may over-shadow other cognitive issues such as dementia and specific brain injury.

The reporting of age equivalent scores is not always appropriate for adults with an intellectual disability as they can give an inaccurate impression of them 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.

As in other domains of psychometric application, assessments should only be completed by those professionals with appropriate training, experience and qualifications to do so. Because of the particular issues with this special needs group, psychometric results should only be interpreted by those professionals with the appropriate training, experience and qualifications to do so. Results should be reported in a clear manner, in their standardised form. Raw data is not reported but is kept with the original assessment paperwork.

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 feedback results to a nominated person(s) within the client's support network for example parent or key-worker.

A resource book has been issued by the Ministry of Health pertaining to the assessment of those with intellectual disability which is a timely adjunct to the Board's guidelines. 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.

### **Use of psychometric assessment for purposes where 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. The roles of Family Court assessor, forensic examinations, cases involving litigation, employment disputes, assessments for disability support and ACC contracted assessments to review benefit entitlement are some of the roles which can be viewed as conforming more to a legal paradigm than that of delivering a health service.

The roles of therapist and expert assessor are likely to be conflicted. Therefore a treating psychologist should avoid agreeing to be an expert witness or to perform an evaluation for legal purposes although may be requested to give evidence of the observed facts or a clinical opinion of their client, with that person's consent. A psychologist who is contracted to do an evaluation as part of a legal or quasi-legal process is answerable to the court or the lawyer or the contracting agency who engaged his or her 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 professional judgement with regard to the process of the assessment or the outcomes from either the contractor or the subject of the assessment. The psychologist may not be able to keep the roles separate where there are few with the requisite skills and the clients may have special needs, e.g. when the client is an intellectually disabled person.

For the psychologist therapist, confidentiality may only be waived by the client or by a court order, and normally is subject to being privileged information. Privilege in this context means that the confidentiality of information obtained as part of a therapeutic engagement is protected in accordance with 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 to the lawyer or contractor, as he or she is acting as their agent. There is a duty to inform the subject of a legal evaluation of the constraints to confidentiality and the intended use of the product of the assessment.

Whereas the therapist is a care provider, the expert assessor must be neutral, objective and detached. Whereas the therapist is not so concerned about historical truth as the perception of the client, 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.

Whereas a therapist–client relationship is based on the principles of beneficence and non-maleficence, the expert evaluator strives to gather information and to 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. The therapist develops a therapeutic alliance with the client, and avoids actions which may disturb that relationship, while the expert assessor's role is to assess and report the findings to a third party who will use that information in an adversarial setting or one which may be subject to dispute.

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

When providing expert advice to a court or decision making authority, the psychologist should take care to not exaggerate the attributes of a psychometric test and psychologists should not go beyond their competencies.

In giving testimony, a psychologist must stay mindful of the confidential nature of the psychometric tools used and to avoid releasing information about the nature of the test into the public domain. Protecting misuse of tests includes safeguarding the confidentiality of the test material, avoiding release of such data and materials to unqualified persons and releasing data without adequate interpretation. If the psychologist is pressured to supply information about the tests, he or she should advise the court of the risks of compliance, that is, the potential loss of utility of that assessment tool.

Where there are clear incentives for the client to be found to have a disability or condition, the possibility of malingering may need to be evaluated. The DSM IV defines malingering as “the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution or obtaining drugs.<sup>20</sup>” Assessments for the purpose of ACC or income protection insurers determining entitlement to benefits are examples where there could 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 this aspect has been actively considered<sup>21</sup>.

## **Purchase of tests**

Tests can be purchased from various sources, including NZCER, the specific test publisher, or other internet-based providers. It is recommended that tests be purchased in accordance to the competency levels set by some test producers and that specific training be undertaken for using the specific test in a competent and clinically 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. The psychologist will be assigned a level of tests that they are deemed eligible to access. In this way the access to more complex tests is controlled as a safeguard against the potential misuse of the tests. Most psychologists are likely to be able to access Level C and D tests, but this is not an automatic right.

It is a commercial reality that many psychometric instruments (particularly those used in human development and employment selection) are now available for purchase

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<sup>20</sup> APA (1994), pg 683.

<sup>21</sup> British Psychological Society (2009), National Academy of Neuropsychology (2005), American Academy of Clinical Neuropsychology (2009)

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. It behoves psychologists to lead by example and to 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. There may also be a need to educate stakeholders of the potential risks that may arise from the misuse of psychometrics.

## **Computer based assessment and Internet communications of test results**

Computer based assessments include a range of scenarios, such as "high stake" scenarios where 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 where the identity of the test-taker may not be authenticated.

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. Back up 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.

The psychologist should assess the appropriateness of the use of the internet based test as compared to a test delivered by an alternative method. The content of the test, the technical adequacy, and the validity of the test for the desired purpose should all be considered. Particular care should be used if the norms and psychometric technical data are based on pen and paper or face to face delivery.

Limitations to interpretations may include the use of uncontrolled, and therefore less standardised, conditions. It may also be impossible 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.

Test interpretations should be given in a comprehensible and meaningful form which is fit for the intended purpose and recipient audience. Due to the difficulty of knowing the impact of negative feedback, the lack of knowledge of the state of mind of the test-taker, and the difficulty of providing immediate support if there is a negative reaction to feedback, it may be appropriate for feedback to include direction on how to obtain support.

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

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

## **Use of Psychometrics in research**

Research use of psychometrics will also include the development of any 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 should include abiding by copyright restrictions, such as not photocopying protocols to avoid purchasing psychometric materials, and reserving the right of use to those with appropriate psychometric training.

Informed consent should include communicating the purpose of the research, how the individual respondent's data will be used and stored, whether or not there is provision for being given individual feedback or a report on the outcome of the research, and who is responsible for the research.

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

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