New Zealand
PSYCHOLOGISTS BOARD
Te Poari Kaimātai Hinengaro
o Aotearoa

DRAFT Guidelines on the use of Psychometric Tests

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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 of the Guidelines

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

The guidelines will aim to clarify issues and, where possible, offer guidance on best practice with regard to:

- What is meant by "a psychometric test"?
- Safe and ethical use of psychometric assessment procedures.
- Upholding the highest standards of accuracy and fairness when administering tests.

- Informed consent.
- Interpretation of test results.
- The use of symptom validity testing, reliability, and dissimilation.
- Third party observers.
- Cultural considerations.
- Responsible reporting of psychometric results.
- The potential risks in the use of tests and how those risks can be mitigated.
- Keeping records of psychometric testing.
- Responsible use and the protection of the intellectual property of tests
- Training in the use of psychometrics.
- Use of psychometrics by students during training.
- Special issues related to infants and children.
- Use of psychometric assessment where the psychologist is an expert witness.
- Purchase of psychometric tests.
- Computer based assessment and Internet communications of test results.
- Use of psychometrics in research.

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[1]" 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.

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

[1] College of Alberta Psychologists (2005).

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 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.

In accordance with the Code of Ethics, psychologists must select appropriate assessment instruments and procedures for the objectives of the assessment. Psychologists should be able to justify the selection and interpretation of tests if required. Psychologists are responsible for the contents of any report that they sign.

Psychometric tests vary in the rigour with which they have been developed. A psychometric test should be valid (proved to measure what it claims to measure), reliable (that is, repeatable) and sensitive (able to differentiate with regard to the attributes of interest)[2]. 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, if any, tests which have been developed and validated against New Zealand populations. Therefore the normative data which the New Zealand client is being compared with is likely to be based on a population from the country in which the test was developed.

The type of measure[3] used determines the comparisons that the test enables. Questionnaires may only allow a "type" classification or label. Percentile scores or ratings allow an ordering that indicates how that individual has scored compared to the comparison group. 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 can have substantial impact on the test-taker. 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.

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

[3] O'Connor, F. (1993)

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.

Decisions about testing should be based on a thorough analysis of the client's requirements and the purpose that the assessment is addressing. In an employment setting 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. 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. An assessment for health purposes often proceeds by the formulation of hypotheses which the assessment then sets out to test. Regardless of the setting and the objectives of the assessment, the psychologist should ensure that the constructs that are being measured are relevant to the assessment need. 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.

The psychometric assessment will be of most value if the test-taker is motivated to do their best, is interested and engaged, and the relationship with the assessing psychologist enables openness[4]. This will be promoted by the test-taker 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 test-taker at ease but also to be perceived as neutral and unbiased. The psychologist should not be overly familiar or negative. If a test-taker 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, either especially selected for that person or a standard set of tests known as a "battery" of tests. What the psychologist chooses to use will be based on professional decision making about what will be the best combination of tests to use for the individual and 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 should 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. An assessment should proceed 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).

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.
The directions and instructions specified in test manuals should be strictly adhered to. The test must be administered in the standard way in order to allow the results to be compared to the results of others. If there is reason to vary the administration of the test,

[4] O'Connor, F. (1993)

this should be fully recorded with the rationale for this variation. 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).

Sources of potential 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 reason for using an earlier version. If financial constraints limit the availability of access to tests, e.g. when an employing organisation has not been able to supply the more recent version, the psychologist should endeavour to keep current with recent research on any limitations of earlier versions.

Test takers should be welcomed and briefed in a manner that alleviates anxiety. If the test taker continues to show anxiety, appropriate assistance may need to given. This may include allowing a support person in some circumstances. If this is deemed necessary, then the testing should proceed in a manner which minimises the distortion to the normal administration procedures. The inclusion of a third party into the assessment situation is discussed more fully below.

Informed consent

Psychologists must gain informed consent of test takers before administering the test. In accordance with the Privacy Act requirements, this means informing the client of the purpose of the test, how the information may be used and who will have access to those results. Any constraints to confidentiality should be explained at this time. Where test taking is optional, the consequences of taking, versus not taking the test, should be explained to relevant parties so that an informed choice can be made. This may mean informing the test taker of risks and benefits which may arise from the assessment so that person is able to exercise their right to choose cognisant of likely consequences. Informing of risks may include possible unintended consequences, such as an unauthorised release of the information, and how these risks will be managed. The psychologist should be alert to any educational, language or cultural barriers to comprehension. In an evolving assessment, the process of obtaining consent may need to be revisited so that the test taker is involved in the unfolding assessment process and any decisions that arise from it. This may include giving permission to seek information from specified others.

In a situation where the test taker 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.

There may be circumstances where the test taker is refusing consent but a court has ordered an assessment. Consultation with peers and supervisor is recommended in this situation. Allowing time for the client to settle from an agitated state or to get over a medical condition may be advisable. Seeking the assistance of family members to elicit advice about how to optimally gain cooperation to maximise performance from the client may also be helpful.

Where children are involved, obtaining informed consent is likely to require the consent of parents or guardian. When the test subject is a child of separated parents, informed consent should ordinarily be sought from both parents.

In accordance with the Code of Ethics, 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 situation discussed

with the test subject. If circumstances change or if there is a significant lapse in time, further consent should be sought.

If the assessment is to be done as part of a group training exercise, then gaining consent should include clarifying how widely in the group the results of the assessment will be shared.

Interpretation

Psychologists should interpret test scores in conjunction with other collateral information. Decisions about test-takers should not be made on the basis of a psychometric test in isolation. 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 person's performance on a psychometric test including factors such as the person'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 person'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 may also include factors such as the lack of normative data for this population or cultural group. Any potential constraints should be recorded and allowed for in the interpretation of results.

If the same psychometric instrument has been undertaken by the test-taker 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 should not be the sole basis for decisions about clients. Similarly a generic 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 in the light of other evidence.

The psychologist should report derived scores, such as standard scores, percentiles and age-equivalents with great 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. A test only measures the attribute it is designed for. 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. However the test may help generate hypotheses for further assessment.

The use of symptom validity testing, reliability and dissimilation

The interpretation of psychometric assessment results relies on the results being valid for that individual. The value of an assessment to meet the purpose for which it has been completed depends on the quality of the test data on which it draws, including the subject's motivation to adhere to the test requirements. Effort or motivation indicates the test taker 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 person 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 test-taker that they should perform to the best of their ability and that tests of effort will be included in the assessment.

Symptom validity testing, also known as effort testing, is intended to give reliable and valid indices which are sensitive to distortions in motivation. A failure on an effort test means that test taker has performed poorly below a suitable cut-off or below their capability as determined by other criteria. Effort is dynamic and poor performance on one test may not be indicative of lack of effort in other parts of the performance.

Best practice determines that effort tests should be given routinely as part of a clinical assessment of cognitive function, particularly where test takers are involved in litigation or claiming financial benefits for disability. Failure to assess this would need to be justified. In this context effort testing both indicates the validity of the assessment and also may protect the test-taker 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, these tests should be dispersed throughout an assessment. The following ethical considerations[5] apply:

- Only well researched effort tests should be used.
- An effort test should not be given at the end of battery of tests or after particularly difficult assessments as otherwise low performance on the test may reflect fatigue rather than effort.
- As with all psychometric assessments, symptom 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 test taker 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.
- Any warning that lack of effort may be detected should be given at the beginning of the test session rather than just before the effort test as this may reduce the sensitivity of the effort test.
- If testing occurs 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.
- 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, such as general uncooperativeness or serious psychiatric disturbance. 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. However conclusions about malingering should be drawn very cautiously, and only after persuasive converging evidence, having considered all possible hypotheses. Referring to the client's assessed inconsistent motivation

[5] Iverson, 2006, 2007.

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 effort requires considering the pattern of performance across multiple measures. One approach which has been widely accepted gives an operational approach to diagnosing malingering neurocognitive dysfunction in a systematic way[6], to conclude this is a definite, probable or possible diagnosis. 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.[7] 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[8] which may contribute to a test subject demonstrating poor effort in an assessment situation, 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, physical factors such as musculoskeletal injuries (e.g. peripheral neuropathy), pain, fatigue, medication effects, psychological and personality issues such as anxiety and/or depression. The test taker may also report iatrogenic symptoms which are learnt through the exposure to diagnosis and treatment. For example, the client may hold a maladaptive belief that they suffer from difficulties more serious than what is warranted. Such beliefs may be sincerely held but misguided through anxiety about their health and perceiving the symptoms as more serious than what they are. However these possibilities should be considered against the knowledge that effort tests are designed to be very easy and not easily affected by other factors.

When self-reports are not consistent with other data, an assessing psychologist should not assume deliberate intention to mislead. The test-taker 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.

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.

Where the test taker demonstrates non-adherence to the requirement of the test situation or appears to exaggerate a condition that they have, the psychologist may consider the person is malingering, which implies a deliberate intent to perform poorly. Some or all of the following four criteria may give cause for malingering to be suspected: a medical legal context provides an incentive; there is a marked discrepancy between the claimed disability and objective findings; a lack of cooperation with treatment or testing; and an antisocial personality disorder

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

[7] British Psychological Society, 2009.

[8] British Psychological Society, 2009.

demonstrated in previous behaviour. Other emotional disorders may be confused with malingering such as factitious disorder, somatisation disorder, conversion disorder and pain disorder associated with psychological factors.

Distinction can be made between the following terms when drawing up a formulation:

- Symptom validity: the accuracy or truthfulness of the test-taker's behavioural presentation, self-reported symptoms or 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 is indicated by 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 person being motivated by external incentives.

- Somatisation disorder is a pattern of 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 is the presence of 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 is 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 can 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 can 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. The greatest validity is to be obtained when the test taker 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 test taker's performance is likely to vary depending on the nature of the assessment, the purpose for which it is be done, the manner of observation, and the test taker'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 test subjects 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 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 exceptional 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 are a parent with an anxious child, 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.

If a psychologist deems it preferable to allow a TPO, then ways to minimise the impact of observation on the validity and fairness should be carefully considered. Possible steps include seating the observer behind the test taker, and ensuring the observer consents to not speaking or otherwise influencing the examinee 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 test taker 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.

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 third party observer 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.

If the psychologist is unable to satisfactorily resolve any observation request issues to his or her satisfaction, the psychologist may decide to decline the request or decline to conduct the assessment rather than compromise their practice.

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 test taker. 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 individual's behaviour is being predicted or measured against. It should be noted that few, if any, psychometric instruments have New Zealand normative standards available.

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[9] 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[10] has shown that Pacific and older Māori conceptualise their health differently. Research[11] on rehabilitation outcomes after traumatic brain injury which used cognitive assessments before and after intervention concluded that Māori, Pacific and Pakeha groups all benefitted from the programme but that the years of education and English as a second language were confounding factors in 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

[9] Ogden, J. and McFarlane-Nathan, 1997 cited in Ogden, J., 2007.

[10] Scott, K. et al, 2000.

[11] Faleafa, M., 2009.

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, as much as possible attention should be given[12] 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. Some preliminary work[13] has been completed adapting some psychometric tests to include Māori words and clarifying which tests are more culturally fair, but this work needs to be validated with a larger study. 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.

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.

Research on cultural differences in psychometric assessment and the development of norms on psychometric instruments for our New Zealand population is at an early stage of development. Currently there are far more gaps in our knowledge than what is known. Psychologists should remain alert to emergent research and these guidelines will be updated as further information becomes available.

Responsible reporting of psychometric results

It is considered best practice for the psychologist to review in supervision the assessment and any recommendations arising prior to reporting the results to the client or interested decision-maker.

Generally only interpreted results should be released (with appropriate consent obtained from the client). The results of a psychometric assessment should not be communicated to anybody else without the prior informed consent of the test-taker. The parties who may legitimately receive the test results should be clearly identified. The psychologist's ethical obligation to ensure the test taker 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.

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 cover those possibilities by a liability clause which states the limits of the use of the test, whom to contact should fuller information and interpretation be required, and to assure the test-taker and the contracting organisation that the original test material has been stored securely. An example of a liability clause is offered here: "For ethical and legal reasons full profile information and scores cannot be disclosed without professional supervision. All test data is stored securely by [psychologist assessor]. Candidates are entitled to feedback in accordance with professional ethical guidelines and the Privacy Act 1993. Any requests for feedback and further information should be addressed to [psychologist assessor]".

[12] Ogden, J. 2007.
[13] Ogden, J. Cooper, E. and Dudley, M., 2003.

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. 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 functioning.

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.

Oral feedback to a test taker should be presented in a constructive and supportive manner. The results of a psychometric assessment should be communicated in a manner that acknowledges the limitations and constraints to interpretation and also explains the results so that they are understandable for the audience. 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. Results should only be released in an interpreted form, taking into account other collateral information and behavioural observations.

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

In conducting an assessment, a psychologist is a "gatekeeper of sensitive information that may have profound and lasting effects on the person who was assessed".[14] 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 neuropsychologist may

[14]Pope, K.S.

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 to 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 test-taker 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 test-taker subject 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 apply effort in 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.
Generally only interpreted results should be released (with appropriate consent obtained from the client). The results of a psychometric assessment should not be communicated to anybody else without the prior informed consent of the test-taker. Any constraints to confidentiality should be explained when obtaining informed consent.

Test results used for research purposes should not identify the test taker 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 test-taker 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 test-taker'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 must protect the security of standardised and controlled tests. This includes respecting copyright restraints and preventing unauthorised access to psychometric instruments.

Unskilled clinicians 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 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 only by those who have had appropriate training.

Audio and video recording should not occur when psychometric measures are being administered in order to protect the integrity of the tests measures. 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 effort measures became widely known, then they may become invalid indicators of effort.

Clients may request a recording to be made of 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.

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 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.

There is poor evidence for the use of standardised and normative reference tests with young children, and in particular, for those with disabilities. Concerns[15] have been raised about the use of standardised norm-referenced tests with young children across a number of dimensions including 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 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.

In New Zealand, the Ministry of Health [16]operational guideline for the assessment of 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.

[15] Macy and Bagnato, 2010.

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

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 and a 'one-off' psychometric assessment may not provide an accurate sample of psychological status. It could change the next day when a new skill could emerge. 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, ASD, preterm birth and Down syndrome. It is also important to realise that a particular observed behaviour may have a number of different explanations.

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?

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.

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 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.

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 as 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 should not offer the client feedback on the results unless approved by the instructing lawyer or contractor.

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 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.[17]" Assessments for the purpose of ACC or income protection insurers determining entitlement to benefits are examples where there could an incentive for the test-taker to exaggerate symptoms or feign disability. International best practice states that symptom validity testing should be done routinely to demonstrate this aspect has been actively considered[18].

Purchase of tests

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 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. 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 test taker 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.

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[17] APA (1994), pg 683.

[18] British Psychological Society (2009), National Academy of Neuropsychology 92005),AN, American Academy of Clinical neuropsychology (2009)

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 test taker 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. Test takers should have access to on-screen help while completing the test.

Use of Psychometrics in research

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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