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Psychological Assessment and Tests

Psychology

Types of psychological tests, development, characteristics, principles, uses, interpretation and role of nurses.

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CHAPTER 08: PSYCHOLOGICAL ASSESSMENT AND TESTS

Subject: Applied Psychology Course: B.Sc. Nursing

1. Introduction

Psychological assessment is the systematic collection and interpretation of information about an individual's behaviour, cognitive abilities, personality, emotions and psychological functioning.

It helps identify psychological strengths, difficulties and support needs.

2. Definition of Psychological Test

A psychological test is a standardized instrument designed to measure a selected psychological characteristic, ability or behavioural pattern.

3. Psychological Assessment vs Psychological Testing

Psychological assessment	Psychological testing
Comprehensive evaluation	Use of a particular measurement instrument
Includes interviews, observations and tests	Usually involves standardized procedures
Integrates multiple information sources	Produces scores or structured findings
Supports clinical understanding	Measures selected psychological characteristics

4. Objectives of Psychological Assessment

- Assess cognitive abilities.
- Identify emotional and behavioural difficulties.
- Understand personality characteristics.
- Identify developmental and learning difficulties.
- Support appropriate clinical evaluation.
- Assist treatment planning.
- Evaluate changes over time.
- Support educational and occupational guidance.

5. History of Psychological Testing

Psychologist	Contribution

Francis Galton	Early measurement of individual differences
James McKeen Cattell	Early use of the term mental tests
Alfred Binet and Theodore Simon	Development of an early practical intelligence scale
Lewis Terman	Development of the Stanford-Binet adaptation
David Wechsler	Development of widely used intelligence scales
Hermann Rorschach	Development of the inkblot technique

6. Types of Psychological Tests

A. Intelligence Tests

Measure selected intellectual and cognitive abilities.

Examples:

- Stanford-Binet Intelligence Scales
- Wechsler Adult Intelligence Scale
- Wechsler Intelligence Scale for Children
- Raven's Progressive Matrices

B. Aptitude Tests

Estimate potential for developing particular skills.

Examples:

- Differential Aptitude Tests
- General Aptitude Test Battery

C. Achievement Tests

Measure knowledge or skills already acquired.

Examples include academic examinations and standardized educational achievement tests.

D. Personality Tests

Assess personality traits, behavioural patterns or psychological characteristics.

Structured inventories:

- MMPI
- 16PF
- NEO Personality Inventory

Projective techniques:

- Rorschach Inkblot Test
- Thematic Apperception Test
- Sentence Completion Test

E. Interest Inventories

Assess individual interests and preferences, often for vocational or educational guidance.

F. Attitude Scales

Measure attitudes towards selected individuals, objects, events or concepts.

Examples:

- Likert scale
- Thurstone scale
- Semantic differential scale

G. Neuropsychological Tests

Assess selected cognitive functions associated with brain functioning.

Examples include memory, attention, language and executive function tests.

H. Emotional and Behavioural Screening Instruments

Instrument	Purpose
PHQ-9	Depressive symptoms
GAD-7	Anxiety symptoms
DASS-21	Depression, anxiety and stress symptoms
MMSE	Selected cognitive functions
MoCA	Cognitive screening
AUDIT	Alcohol-related risk screening

These are not interchangeable and must be selected according to the purpose and population.

7. Other Classifications of Psychological Tests

Basis	Classification
Administration	Individual and group tests
Response format	Verbal, nonverbal and performance-based tests
Time requirements	Speed and power tests
Scoring	Structured or objective, and judgment-based tests
Purpose	Screening, assessment, selection and guidance
Delivery mode	Paper-based and computerized tests

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8. Characteristics of a Good Psychological Test

A. Reliability

Reliability refers to the consistency or precision of test scores.

Types include:

- Test-retest reliability
- Parallel-forms reliability
- Internal consistency
- Inter-rater reliability
- Split-half reliability

B. Validity

Validity concerns whether evidence supports the intended interpretation and use of test scores.

Traditional validity categories include:

- Content validity
- Criterion-related validity
- Construct validity

Face validity refers to whether a test appears appropriate, but appearance alone does not establish scientific validity.

C. Standardization

Use of consistent administration, scoring and interpretation procedures.

D. Objectivity

Minimization of examiner bias in administration and scoring.

E. Norms

Reference values obtained from an appropriate population for interpreting individual scores.

F. Practicality

Suitability concerning time, cost, resources and administration requirements.

G. Fairness

Minimization of avoidable disadvantage associated with language, culture, disability or other irrelevant characteristics.

9. Reliability vs Validity

Reliability	Validity
Concerns score consistency	Concerns appropriate score interpretation

Examines precision	Examines evidence supporting intended use
Necessary for many valid interpretations	Requires more than reliable scores
Example: Consistent measurement	Example: Measuring the intended characteristic appropriately

A test can yield consistent scores while failing to measure the intended characteristic adequately.

10. Development of Psychological Tests

Steps in Test Construction

1. Define the purpose of the test.
2. Identify the psychological construct.
3. Review relevant literature.
4. Develop the test blueprint.
5. Generate test items.
6. Obtain expert review.
7. Assess content relevance and clarity.
8. Conduct pilot testing.
9. Perform item analysis where appropriate.
10. Evaluate reliability.
11. Collect validity evidence.
12. Establish suitable norms or cut-off criteria.
13. Standardize administration and scoring.
14. Prepare the test manual.
15. Revise and periodically evaluate the instrument.

11. Item Analysis

Item analysis evaluates the performance of individual test questions.

Common Indicators

- Item difficulty: For scored ability items, proportion of participants answering correctly.

- Item discrimination: Ability of an item to distinguish among participants with different levels of the measured characteristic.

- Distractor analysis: Examination of the effectiveness of incorrect answer options.

- Item-total correlation: Relationship between an individual item and the overall test score, calculated appropriately.

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12. Psychological Test Scoring

Raw Score

The initial score obtained from the responses according to the scoring manual.

Standard Score

A transformed score interpreted relative to a reference distribution.

Percentile Rank

Indicates the proportion of the reference population scoring below, or at or below, a particular score, depending on the convention used.

Z-Score

Z = (Individual score - Mean) Standard deviation.

T-Score

T = 50 + 10Z.

Standard T-scores have a mean of 50 and a standard deviation of 10 under this transformation.

Likert Scale Scoring Example

For a positively worded attitude statement:

Response	Score
Strongly agree	5
Agree	4
Neutral	3
Disagree	2
Strongly disagree	1

Negatively worded items may require reverse scoring according to the instrument's scoring instructions.

For a five-point item:

Reverse score = 6 - Original score.

Do not create arbitrary cut-offs or severity categories without a justified scoring framework.

13. Interpretation of Psychological Tests

Interpretation should consider:

- Purpose of assessment
- Test reliability and validity
- Appropriate norms
- Measurement uncertainty

- Age and developmental level
- Language and cultural background
- Educational history
- Physical and psychological condition
- Medication effects
- Testing environment
- Other assessment findings

A score should not be interpreted as a complete representation of a person's abilities or psychological health.

14. Principles of Psychological Testing

- Obtain appropriate informed consent.
- Explain the assessment purpose.
- Select a suitable validated instrument.
- Follow standardized procedures.
- Provide appropriate accommodations.
- Maintain privacy and confidentiality.
- Avoid discrimination.
- Protect restricted test materials.
- Interpret findings within professional competence.
- Communicate results accurately.

15. Uses of Psychological Tests

Clinical Uses

- Mental health screening
- Cognitive assessment
- Treatment planning
- Monitoring outcomes

Educational Uses

- Assessment of learning difficulties
- Academic guidance
- Educational planning

Occupational Uses

- Vocational guidance
- Evaluation of selected job-related abilities

- Training and professional development

Research Uses

- Measurement of psychological variables
- Evaluation of interventions
- Assessment of attitudes and behaviour

16. Limitations of Psychological Tests

- Cultural and linguistic differences may affect scores.
- Anxiety and fatigue can influence performance.
- Self-report responses may contain bias.
- Inappropriate norms may lead to incorrect interpretations.
- Tests measure selected characteristics rather than the whole person.
- Measurement error is unavoidable.
- Screening results may include false positives and false negatives.

17. Role of Nurses in Psychological Assessment

Before Assessment

- Identify the patient's assessment needs.
- Explain the procedure within professional competence.
- Ensure appropriate consent.
- Provide privacy.
- Reduce distractions.
- Identify factors that may affect performance.

During Assessment

- Establish rapport.
- Observe behaviour.
- Follow standardized instructions.
- Avoid influencing responses.
- Ensure patient comfort.
- Document relevant observations.

After Assessment

- Record results accurately.
- Report concerning findings.
- Maintain confidentiality.

- Support appropriate referrals.
- Incorporate relevant information into nursing care.
- Monitor changes in functioning.

Professional Limitations

Nurses may administer approved screening tools when appropriately trained and authorized.

Specialized psychological testing, diagnostic interpretation and complex psychometric evaluation should be undertaken by suitably qualified professionals.

18. Important Examination Questions

Long Answer Questions

1. Define psychological assessment and explain the types of psychological tests.
2. Describe the characteristics of a good psychological test.
3. Explain the process of psychological test development.
4. Discuss the role of nurses in psychological assessment.

Short Answer Questions

- Reliability
- Validity
- Standardization
- Norms
- Intelligence tests
- Personality tests
- Likert scale
- Item analysis
- Ethical principles of testing
- Limitations of psychological tests

19. Quick Revision

- Reliability: Consistency of scores.
- Validity: Evidence supporting intended interpretation.
- Standardization: Uniform procedures.
- Norms: Reference population values.
- Raw score: Initial measured score.
- Percentile: Relative position in a reference distribution.
- Screening: Identifies possible concerns requiring further assessment.
- Psychological assessment integrates multiple information sources.

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Conclusion

Psychological tests provide structured information about cognitive abilities, emotional functioning, personality and behaviour. Appropriate selection, administration and interpretation support safe nursing care and effective multidisciplinary assessment.

Practice questions

Choose one best answer. The answer key and explanations follow the questions.

1. Reliability primarily concerns:

A. Consistency or precision of scores
B. How attractive a test appears
C. The cost of an assessment
D. The number of questions

2. Validity concerns evidence supporting:

A. Any use of a score
B. The intended interpretation and use of scores
C. The shortest possible test
D. A diagnosis from one screening score

3. For the five-point reverse-scoring example, a response scored 2 becomes:

A. 1
B. 2
C. 4
D. 6

4. A nurse receives a screening score suggesting cognitive difficulty in a patient with limited hearing. What should the nurse do before treating the score as diagnostic?

A. Check testing conditions, communication needs and the need for a qualified diagnostic assessment
B. Treat the screening result as a definitive diagnosis despite the hearing barrier
C. Compare the result with a different test that measures another construct
D. Repeat the unmodified test without addressing communication access

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Answer key and explanations

1. A - Consistency or precision of scores

Reliability refers to score consistency or precision.

2. B - The intended interpretation and use of scores

Validity relates to the intended interpretation and use of test scores.

3. C - 4

The supplied example uses reverse score = 6 - original score. Therefore 6 - 2 = 4.

4. A - Check testing conditions, communication needs and the need for a qualified diagnostic assessment

Screening supports further assessment; it is not a diagnosis by itself. Sensory barriers, language and test conditions can affect performance.

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