

**Corso di Laurea Magistrale in Psicologia  
Laboratorio di Psicofarmacologia  
Università degli Studi di Catania**

***Role of psychometric tools in the diagnosis and  
pharmacological treatment of Major Depression***

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# *Introduction*

## **Psychometrics is the science of psychological measurement**

One part of the psychometrics is concerned with the objective measurement of skills and knowledge, abilities, attitudes, personality traits, and educational achievement.

Another part of the psychometrics is concerned with statistical research bearing on measurement theory.

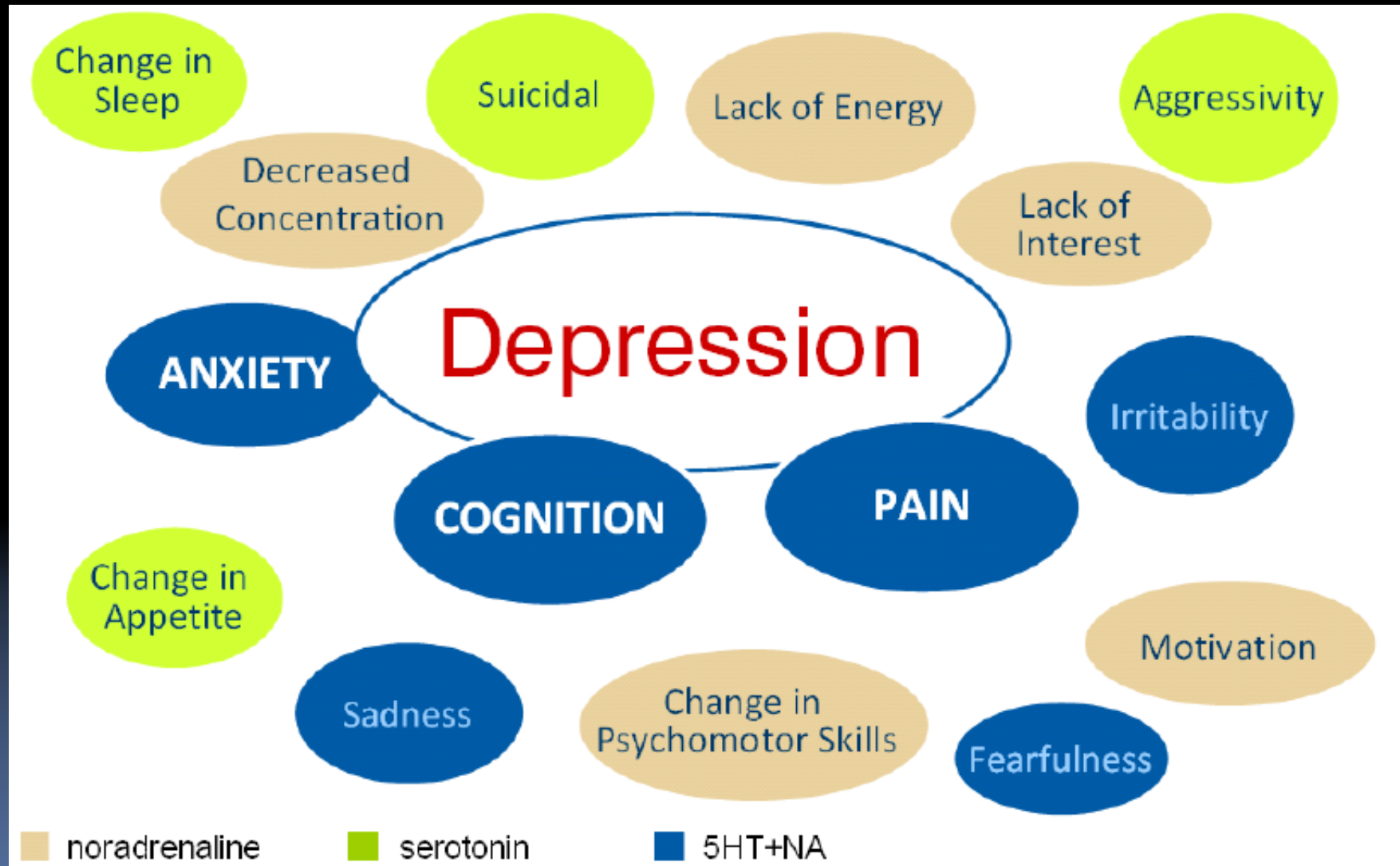
Psychometrics involves two major research tasks:

1. the construction of instruments and procedures for measurement;
2. the development of theoretical approaches to measurement.

## *Psychometrics and pharmacological treatment in Major Depressive Disorder*

Major Depressive Disorder (MDD) is one of the most prevalent and life-threatening form of mental illnesses and a major cause of morbidity worldwide.

# Multidimensional aspects of depression



# *Psychometrics and pharmacological treatment in Major Depressive Disorders*

- 30% of MDD patients fail to respond to antidepressant drugs
- Efficacy trials with drugs often fail to show significant treatment effect even though efficacious treatments are investigated.
- This failure can be attributed to the lack of sensitivity of psychometric tools.

## *Psychometrics and pharmacological treatment in Major Depressive Disorders*

- In the studies on the effectiveness of antidepressants the Hamilton Depression Rating Scale (HDRS) is regarded as the 'gold standard'.
- Other methods of psychometric analysis are available to detect specific clinical effects exerted by antidepressants with different pharmacodynamic profiles:
  - *Montgomery - Asperg Depression Rating Scale (MADRS)*
  - *Beck's Depression Inventory (BDI-II)*

# Observational study: psychometric tools

## **1) Tools for the assessment of depression:**

- *Hamilton Psychiatric Rating scale for Depression (HDRS: Hamilton, 1960; 1967)*
- *Beck Depression Inventory (BDI-II: Beck, 1961)*

## **2) Tools for the assessment of global cognitive function:**

- *Mini Mental State Examination (MMSE: Folstein e al., 1993)*
- *Montreal Cognitive Assessment (MoCA: Nasreddine e al., 2004)*

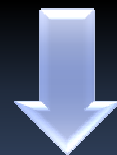
## **3) Tools for the assessment of specific cognitive functions:**

- *Rey's 15 Words Test (Rey, 1958; ed. it. Carlesimo e al., 1996)*
- *Verbal memory span (Digit-Span: Wechsler, 1981)*
- *Frontal Assessment Battery (FAB: Dubois e al., 2000)*

# Study Design

Psychometric tests have been repeated three times:

- before treatment ( $T_0$ )
  - at 4 weeks ( $T_1$ )
  - at 12 weeks ( $T_2$ )



*Outcome evaluation*