

## Behavior assessment: a theoretical and empirical review of models

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### ABSTRACT

Behavioral Assessment is the technique to assess the behavior of the individual. Behavior assessment is very helpful to analyze the undesirable behavior and also help in convert that behavior in to desirable behavior. It includes a technique of Behavior Analysis which forms the foundation for all assessment and behavioral modification procedures. Behavior analyses capitulates initial analysis of problem situation, the clarification of problem, motivation analysis, development analysis, analysis of self-control, analysis of social relationships, and analyzing the social-cultural-physical aspects of the environment. Currently it is very useful in different situation. This paper traces the evolution of behavior assessment as a theory and literature review of the same. It is discussing the different concepts of assessing the problematic behavior and also discussing the five major models of behavior assessment, their contribution to fine the undesirable behavior and help us to planning to intervention for correcting the behavior. In behavior assessment models some models is very use in assessing the behavior such as functional behavior analysis and applied behavior analysis is frequently use in school setting as well as in hospital setup. So we are focusing on functional behavioral analysis and applied behavioral analysis.

**Keywords:** *Behavior Assessment, Models, Functional Behavioral Assessment, Applied Behavior Analysis.*

**B**ehavior assessment is one of a variety of assessment traditions, such as neuropsychological assessment, projective testing and objective testing. This is a set of specific techniques as well as a way of thinking about behavioral disorders and it helps to find out how these behavioral disorders can be changed. One of its core assumptions is that behavior can be effectively understood by focusing on preceding events and resulting consequences.

### **Behavioral Assessment**

“Behavior assessment is more than just a collection of techniques – it is an approach to assessment that relies upon multiple sources of data gathered in multiple situations.” (Mash & Tredal, 1988; Nelson, 1983). Apart from them “Behavior assessment has been defined as the

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identification and description for the purpose of understanding and modification of human responses that are controlled by contemporaneous environmental events.” (Cone & Hoier, 1986; Hayes et al., 1986). “it has been also defined as a deliberate and ongoing problem-solving / hypothesis –testing approach to understanding and altering human behavior.” (Kanfer, 1985; Mash & Terdal 1988)

### ***History of Behavior Assessment***

Behavior assessment developed as the result of dissatisfaction of psychoanalytic and psychometric approaches. Behavioral assessment was formally used in industrial and organizational settings in early years (Hartshorne & May, 1928), it became popular in the clinical context in mid-to late 1960s.

‘Behavior of Organism’ is a book written by Watson (1938). This book gave an incentive to development of experimental analysis of behavior. Watson and Skinner were interested in giving a scientific understanding for all behavior. While studying on rats, Skinner found that environmental events immediately followed behaviors had as much or more influence on the future occurrence of those behaviors as did the antecedents. In Skinner’s words, “the external variables of which behavior is a function provide for what may be called a causal or functional analysis. We undertake to predict and control the behavior of the individual organism” (Skinner, 1953).

The term “functional analysis,” described as an activity that focus the potential ways in which the environment may control behavior (Skinner, 1953). Skinner worked on ‘Verbal Behavior’, he (1957) described “functional analysis of language,” as conceptual treatment of language. In the most general sense, the term retains the same meaning today.

1970s was a period of growth and excitement of behaviorally based assessment, research and treatment by behavioral researchers and clinicians. In 1974, Skinner laid the groundwork for an analysis of how any behavior influence by environment. He was confident in stimulus–response (S–R) psychology. In 1978, Wolf applied behavior analysis by the using of functional behavior method. With this method a behaviorist can identify the antecedent and consequent event which is responsible for a socially undesirable behavior and use to this information to design the intervention to change socially desirable behavior. In 1982 to 1983 Goldfried and Nelson noted that many behavioral assessors labored develop their techniques and tools. They also demonstrate the scientific basis of behavioral assessment in order to assessing psychological problems, formulating treatment and treatment outcomes. In 1993 Carr provided an insight critique of the goal and philosophy of functional assessment, which suggested that behavior analysis is primarily, if not exclusively, concerned with the functions of behavior. In 1997, the amendment to the individuals with disabilities Education Act (IDEA) required by federal law the use of functional behavioral assessment and positive behavioral supports and interventions.

In 2000, Lwata et al. established a simple format for experimentally investigating the function of any behavior. In 2004 Nelson-Gray and Paulson discussed how behavior assessment and psychiatric diagnosis can be used collaboratively.

### ***Uses of the behavior assessment***

Behavior assessment can be used for different purpose that are given below:

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1. Behavior assessment can be used for diagnosis and these assessment activities focusing on determining the nature or course of the client's problem.
2. It can be used to found the prognosis of the client's problem. And generating prediction concerning future behavior under specified condition.
3. Behavior assessment can also be used in designing treatment or in gathering information that will assist the development and implementation of effective interventions.
4. Behavior assessment can be used to evaluate the effect of the treatment.
5. It can be used to improve child development.

### ***Need of behavior assessment***

Behavior assessment is needed for the better understanding of behavioral dynamic of individual which are:

Now a day there are number of problematic behaviors seen in children and for which the assessment of behavior in a particular manner is needed. So, it can say that behavioral assessments can help answering the question that why a student exhibiting challenging behavior?

It also helps to identify that, why a kid does maladaptive behavior and it also helps to analysis, what children are trying to convey. It is also helpful to know that is a particular behavior of child is normal or not, and if it is not normal then is it because of developmental issues, or something more serious. So above are the need of behavior assessment now will describe of behavior assessment.

### ***Major Approaches of Behavioral Assessment***

1. Triple responses system
2. BASIC ID model
3. Radical behavior analysis
4. Multidimensional system assessment
5. Functional behavior analysis
6. Experimental behavior analysis
7. Applied behavior analysis

### ***Triple Response System***

Lang (1968, 1971) gave the concept of triple response model. He emphasized on the response-response relations which represent emotional concept such as fear or anxiety. Triple response system is also known as Tripartite assessment model. This model is based on traditional views of behavior and personality, this hypothesized that a person has capacity to deal a situation (e.g., traits such as intelligence or shyness) when he is incapable to deal a situation effectively he starts doing undesirable behavior. This model was designed to assess the dimensions of anxiety. In this approach the authors focused on three response system assessment that was verbal, somatic and behavioral dimensions of disorder (Cone, 1979; Eifert & Wilson, 1991; Evans, 1986).

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The triple response system helps to present a general framework for selecting target behaviors. It has broadened the scope of what is considered to be a target behavior and has promoted the use of multiple-assessment techniques to measure the different response domains.

The triple response model approach has a basic methodological problem of being the frequent confounding of what is measured (content of assessment) and how it is measured (method of assessment). This confounding has been exacerbated by the vague and inconsistent definition and operationalization of the verbal-cognitive content area in the triple response model literature.

### *Challenges in triple response system*

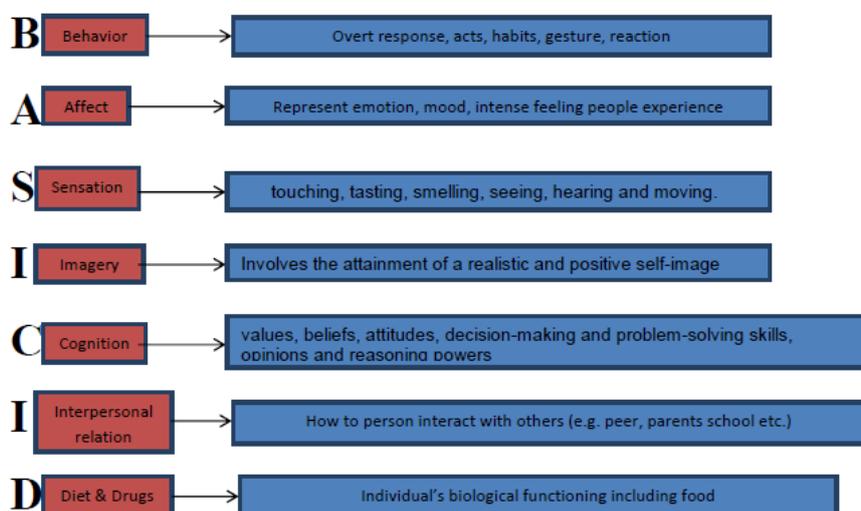
While this assessment system is used to assess the child's behavior, the observer focuses on only three aspects which are verbal, somatic, and behavioral. The problem occurs when the client does not explain his problem verbally. The observer can only observe the person's behavioral problem and somatic problem. Another thing is not explained through this model.

### *Basic ID Model*

Lazarus (1973, 1976) gave the concept of the BASIC ID model. According to him, effective behavior therapy is possible only if the correct target behaviors and the contexts surrounding those behaviors have been adequately assessed. The collected information has been used to develop the treatment plan. The acronym BASIC ID is a heuristic assessment which is used to specify the aspects of a client's life that should be thoroughly assessed prior to, during, and following treatment.

Assessment according to BASIC ID involves the following steps:

1. Identify issues according to BASIC ID.
2. Note the primary modality.
3. Build from the primary modality.
4. Note the modality firing order.
5. Use techniques appropriate to each modality.



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A typical behavioral assessment as per BASIC ID model will be the same as shown below: [The below displayed assessment was done for recreational therapeutic process for Handicapped Juveniles- Therapeutic Recreation for Handicapped Youth Offenders: A Multimodal Approach- University of Missouri 1990]

**Table 2**  
**Multimodal Profile**  
**BASIC I.D.**

<b>Mode</b>	<b>Concern/Problem</b>	<b>Intervention Strategy</b>
<b>Behaviors</b>	Does not talk in social groups Negative self-statements	Assertiveness training Positive self-talk assignments
<b>Affect</b>	Anxiety and stress Negative attitudes toward leisure	Relaxation training Values clarification
<b>Sensations/- Sensorimotor</b>	Tension headaches Lacks activity skills	Relaxation training Leisure education
<b>Imagery/interests</b>	Low self-image/identity crisis Lacks leisure interests	Self-image enhancement Explore new interests
<b>Cognitions</b>	Perceived incompetence in leisure activities Inability to make decisions	Self-efficacy training Problem solving/decision-making training
<b>Interpersonal Relationships</b>	Loss of friends Negative family interactions	Friendship training Role playing
<b>Diet/Drugs</b>	Lacks a balanced diet Physical inactivity Alcohol abuse	Nutrition information, learning to cook for one; Progressive fitness Alcoholics Anonymous

After review the BASIC ID Model it can said that this assessment model focused on the different aspects of the individual which is behavior, affect, sensation, imagery, cognition, interpersonal relationship, diet and drug.

### *Challenges of this model*

The BASIC ID model provided no theoretical or empirical basis to assist in determining the interrelations between the various domains. Observer used this type of behavior assessment model for assess the maladaptive behavior of the person. This assessment model can help to assess the person's behavior, affect, sensation, imagery, cognition, interpersonal relationship, diet etc. All of these aspects assess by this model it's time consuming. And observer could not focus all aspects equally.

### *Radical Behavioral Analysis*

In Watson (1913) view the science of behavior should be a natural science, and Skinner (1945), coining the term *radical behaviorism*, similarly asserted that the science of behavior (behavior analysis) is a natural science (Skinner, 1953). Radical behavior analysis has been propounded as the proper form of behavior assessment. A major advancement in the radical behavioral assessment is that it is enough to evaluate subtle treatment effects that might otherwise be overlooked or masked if assessed by means of the group statistical state (Barrett et al., 1986).

Blackman pointed out that radical behaviorists, he explained the behavior in terms of environmental variables.

### *Cone & Hoier (1986) defined six characteristics of a radical behavioral analysis*

1. A focus on behavior in which behavior is viewed as a form of “matter in motion”
2. The application principles that deals with the motion of matter that are based upon absolute and standard units of measurement (e.g. the dimensions of frequency, latency, duration and intensity).
3. The inducting gathering information about behavior.
4. The use of an idiographic approach to assessment designed to detect intra individual behavior organizations.
5. Assessment that is criterion-referenced and behavior thus interpreted solely in term of its effects.
6. Accuracy that is used as the ultimate criterion of measurement adequacy.

On the basis of review the behavioral assessment radical behavioral assessment emphasis on the environmental aspects of the behavior.

### *Caution with radical behavior analysis*

Radical behaviorism fails to account for purpose, was to insist that the delivery of a reinforcers strengthens whatever behavior it happens to coincide with—that contingency consists of “order and proximity” alone (Skinner, 1961).

## **MULTIDIMENSIONAL/SYSTEM ASSESSMENT**

This system involves the assessment of cognition, emotion and family relationships.

**Cognition assessment:** cognitive assessment includes a variety of formal assessments of a child or adult’s abilities and skills. This type of assessment covers a wide range of areas that includes an assessment of intelligence, perceptual abilities, verbal and non-verbal skills, attention and processing or memory abilities.

Cognitive function can be assessed under the following component:

1. Cognitive process (biases and distortion) cover an incredibly wide spectrum of thought and behavior: perception, information storage, information retrieval, association, abstract processing.
2. Cognitive content (internal dialogue) the sum or range of what has been perceived discovered or learned.
3. Cognitive product (attribution)
4. Cognitive structure (schematic memory) is a mental process that individuals use to process and understand information. They organize information for learning and recall.

### *Emotion assessment*

it includes evaluation of affective variables which is responsible for undesirable behavior Researchers and clinicians used emotional assessment in their behaviorally oriented assessment. This is helpful when assessing a problem behavior in close relationships, such as marriage.

### ***Family system***

This system can be used to assess the interpersonal relationship of family members and sociocultural variables which may influence maintenance and alteration of behavior problem. The trend to evaluate the effects of interpersonal system on psychological functioning is especially noticeable in the child psychopathology literature. For example, parent-child interactions have been found to adversely affect by parental social isolation.

On the basis of review the multidimensional assessment we have found that this approach mainly focused on the different aspects of the individual that is cognitive assessment, emotional, and family system.

### ***Challenges in multidimensional assessment model***

In this type of behavior assessment some problems occur, observer assess the family system of the person but all kind of information does not give by the parents.

### ***Functional Behavior Assessment***

A Functional Behavior Assessment (FBA) is not a single term; it is a broad term used to describe a number of different methods. Which helps researchers and practitioners to identify the reason of occurring of an undesirable behavior (Cooper, Heron, & Heward, 2007). The term functional analysis was proposed to describe this operant conditioning approach that consisted primarily of obtaining frequency, rate and duration measures describing the behaviors of interest. (Peterson, 1968) Functional behavior assessment is generally considered to be a problem-solving process for addressing problematic behavior of a person. It depends on a variety of techniques and strategies to identify the purpose of specific behavior and to help in selecting interventions to directly address the problem behavior.

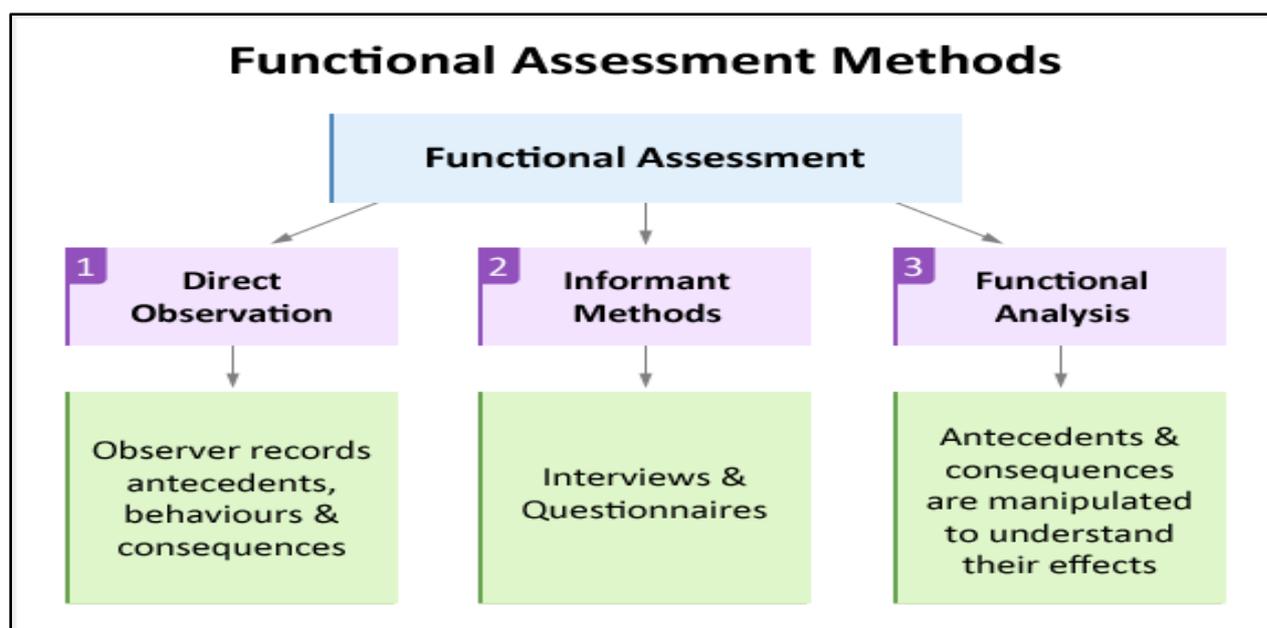
Function behavior analysis can be defined as a collection of methods for gathering the information about antecedent, behavior and consequences in order to determine the reason (function) of behavior. Once the function of behavior determined, this information is used to design the intervention to reduce problem behavior and facilitate positive behavior. (Witt, Daly & Noell, 2000) According to Minnesota definition of a functional behavior assessment, "Functional behavioral assessment" or "FBA" means a process for gathering information to maximize the efficiency of behavioral supports".

### ***Use of functional behavior assessment***

1. Offers a deeper insight
2. Enhances child development
3. Offers important solutions

### ***ABC's of Behavior: FBA Terminology***

1. A-B-C Procedure can be used in function behavior assessment to assess the antecedent event , behavior and consequence.



### *Methods of functional behavioral assessment*

1. Direct observation
2. Informant methods
3. Functional analysis

#### *Direct Observation*

Direct observational method is described as a technique with it an observer would observe the client engage in activities within their natural environment. An observer focused on mainly When the challenging behavior occurs during a natural environment, he would record what happened just before it, what happened just after it and also take notes on what they perceive to be the potential cause of the behavior. This method helps to develop a hypothesis about the function of the behavior.

The terms used for this method include:

1. Direct Observation (Miltenberger, 2008).
2. Descriptive Functional Behaviour Assessment (Cooper et al, 2007).
3. Direct Observation (O'Neill et al, 1997)

#### *Informant Methods*

The informant method can be completed by the information collect from client, their parents, staff members and teachers though interview and questionnaire. These interviews can be used to identify what was happening before the behavior occurs and then what happens after that behavior. It is similar to direct observation method, this method is also help to develop a hypothesis for the function of the behavior.

The terms used for this method include:

- Indirect Methods (Miltenberger, 2008).
- Indirect Functional Behaviour Assessment (Cooper et al, 2007)
- Informant Methods (O'Neill et al, 1997)

### *Functional Analysis*

The third method is functional analysis, this method involves clinician deliberately changing what happens before and after the behavior in an effort to test what might be causing the behavior.

Unlike the other two methods that are used to create a hypothesis, this method is used to actually test the hypothesis and is the only method that can truly predict when the behavior will occur.

### *SORKC Model*

Kanfer & Saslow (1969) added an important dimension to the functional analysis approach to assessment by incorporating information regarding the individuals whose behavior was being assessed.

SORKC summarizes the classes of assessment information relevant to their assessment model where:

1. **S:** refers to the stimulus in the external and internal environment that elicits the target behavior.
2. **O:** refers to the organism, or biological status of the client (including genetic, physiological, neurological, biochemical and mechanical variables).
3. **R:** refers to the target behavior, encompassing motor behavior, cognitive-verbal behavior and physiological emotional behavior.
4. **K:** refers to the contingency relations between the target behavior and its consequences, including the frequency and timing of response outcomes and schedules of reinforcement.
5. **C:** refers to the consequences the target behavior and may include the variety of social and nonsocial events that vary in their valence.

In SORKC model Kanfer and Saslow (1969) provided an elaborate system of behavioral diagnosis. The system proposed a seven-stage analysis for conducting behavioral diagnosis.

### *Initial Analysis of Problem Situation*

This is the first stage of analysis. It deals with prioritization of target behaviors and the study of situations that elicit and sustain the target behavior. The undesirable behavior is classified under two broad groups:

- Behavioral excesses or deficits: Irritability, hostility, abusiveness, assaultive, delusions, hallucinations, talk.
- Behavioral deficit: Poor social relationship, poor socio occupational functioning.
  1. **Clarification of Problem Situation-** Clarification of problem situation helps to explain how the problem behavior is perceived by those who are affected and how the significant others would respond to the treatment.
  2. **Motivational Analysis:** Motivational analysis includes analysis of the reinforcement and punishment history that maintain problematic behavior of the client. It also includes identification of major dispensers of reinforcement and punishment in the natural setting.

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3. **Developmental Analysis:** This analysis helps to trace out the course of development of the index behavior, including associated physical disorders, biological deviations and limitations. Sociological change is also considered under developmental analysis. It has an important bearing on treatment. It includes socio-cultural background, ethnic affiliation, and peer group influences.
4. **Analysis of Self-control:** Analysis of self-control of the client provides an idea about the client's ability to control problematic behavior and his dependency on the significant others, and whether punishment has been able to control the problematic behaviors. Whether the client has been able to avoid those situations that elicit such behavior and has the capacity to use self-control in the situations where it is desired, are important issues.
5. **Analysis of Social Relationships:** Behavior of the people in the client's environment who significantly influence his behavior through reinforcement and punishment are important. Their mutual expectations and roles in treatment are carefully analyses.
6. **Analysis of the Social-cultural-physical Environment:** The extent to which behavior is perceived to be problematic or abnormal under a specific socio-cultural setting determines the selection of treatment modalities. The behaviors, which are well accepted in the family, neighborhood, peer group or in the occupational settings, are not considered for treatment until the individual reports personal distress. The differential support, tolerance, antagonistic response to the target behavior and acceptance of psychological treatment by the family members are focused in this analysis. Thus, behavior analytic approach has a broader scope than the pathology-linked medical approach to treatment.

**Caution with Functional Assessments:** While functional assessments are a professional standard, there are considerations that have to be taken into account before conducting one. For example, it may be unethical to use a functional assessment, particularly the functional analysis method where deliberate manipulations are made that effectively encourage the client to engage in the target behavior (O'Neill, et al 1997).

This may be unethical because if you consider a child who engages in self-injury or aggression towards others, there is the question of whether it is acceptable to deliberately test different antecedents and consequences that will lead to the child injuring themselves or another person.

O'Neill et al (1997, p.61) state that 'before carrying out manipulations involving such behaviors, we need to determine the level of potential risk and decide whether taking those risks is justified by the potential outcomes.'

Strategies would have to be developed to protect the individual and those conducting the assessment. In this situation anyone involved with the client (the client themselves if possible, parents, staff, practitioners etc.) and any legal review boards or committees within the jurisdiction must be consulted and informed consent obtained before any assessment is carried out.

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There is also the issue that behaviors may be occurring as a result of a medical or physical condition. For example, sinus or ear infections, mouth ulcers, allergies, toothaches, constipation etc. may induce or worsen a challenging behavior (O'Neill, et al 1997).

On the basis of above explanation it can say that in functional behavioral analysis the assessment is focus mainly on different level of functionality of the individual which is Analysis of Problem Situation, self-control, social relation, developmental analysis, motivation analysis, social and cultural environment.

After review the literature of behavior assessment, author was found that functional analysis is frequently use to fine the problematic behavior and can also use in school setting as well as in hospital setup. It is very helpful in planning intervention.

### ***Case formulation***

#### **According to SORKC Model**

##### **Initial analysis of problem behavior**

1. Excess behavior: aggressive behavior shown whenever his father is in front of him, disobeying elder except his mother, stealing, use of tobacco five to seven packet per day.
2. Deficits behavior: impaired social relationship, not doing any household work.
3. Asset behavior: play carrom, and ludo, enjoy playing with friend.

##### ***Clarification of problem situation***

The client was born of full-term normal delivery at hospital. Birth cry was present. He had history of high-grade fever at the age of 2 months that was remain for 3 to 4 days continuously. Delayed milestones were present such as sitting started at the age of 1 year old, started walking at the age 3 years old. He started going to school at the age of 5 years. He was not good in studies but his father was expecting him to be good in study. His father asked him several times to focus on his study but he was unable to understand the things. After 3-4 years he stopped going to school because his school teachers were saying that he would not be good in study. After that he used to spend most of his time with his friend outside his home. When his father scolded him because of his wandering behavior with his friend. He started arguing and disobeying him. He started thinking, his father is bad, and he does not love him. After that he started taking tobacco with his friend. Gradually his habit of taking tobacco increased and when he had no money for taking tobacco, he started stealing money from his home. He has stolen money from his father's pocket and almirrah. When his father came to know that child has started stealing money. Then he has beaten him. His father made him understand that tobacco is injurious to health, tobacco causes cancer. But child did not listen at all, and continued taking tobacco. After that his father went to his job taking him along. But child was not doing any work, and did not help his father. His aggressive behavior towards his father gradually increased. After that his father tied him with chain and brought him to juvenile rehabilitation center. But his father did not get any solution from there. And brought him to IMHH Agra for taking treatment.

##### ***Motivation analysis***

1. He has no insight about of his behavior. But he is aware about effects of the use of tobacco. He was saying "cancer ho jata hai". This thought was present in his mind because of his father continuously saying tobacco is very harmful for their body.
2. External motivation is present.

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3. Prognostic factors:  
poor- low intelligence, low insight.  
good- family support.
4. Nature of the illness: continuous, insidious.
5. There was no earlier therapy.
6. External locus of control is present.
7. Developmental analysis
8. Biological: decrease appetite.
9. Behavioral: show aggressive behavior, disobey of elder, stealing of money, use of tobacco.
10. Social: impaired social relationship.

### ***Analysis of self-control***

1. He could not control his aggressive behavior by himself.
2. Factors of relapse: use of tobacco, conflicting relationship with his father
3. When he decided, he did not take tobacco for three to four days.
4. He overcome of his problem with support of his father and other family members.

### ***Social relationship***

1. His maladaptive behavior increased whenever his father beat him. He argues with his father, show aggressive behavior about him. After that he was intentionally stealing money for taking tobacco.
2. His parents will help in therapy.
3. His father is the decision-maker in his family.
4. His mother is very close and emotionally attached to him.

### ***Analysis of socio cultural and physical environment***

1. He belongs to low socio-economic status from Firozabaad. Basic facilities are available in his family
2. His maladaptive behavior is not acceptable in his surroundings.
3. Professional help is being taken by parents to work on maladaptive behavior

### ***The Experimental Analysis of Behavior***

A natural fact in a science of behavior is the probability that a given bit of behavior will occur at a given time. An experimental analysis of behavior deals with that probability in terms of frequency and rate of responding. Rate of responding would be a meaningless concept if it was not possible to specific position of response in such a way that abstracted instances of an operant can be counted. The specification is usually making with the help of a part of the apparatus the “operandum” which sense occurrences of a response.

This type of behavior analysis is concerned primarily with basic research and the discovery and evaluation of fundamental principles of behavior in laboratory settings. In which dependent and independent variables includes. The behavioral processes studied in an experimental analysis usually tally of change in probability (or rate of response) as a function

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of manipulated variables. The changes are followed in real time rather than from “trail to trail”

### *Applied Behavior Analysis*

This type of behavior analysis is concerned primarily with applied research and extension then take action for further elaboration of fundamental principles of behavior in natural settings.

Applied Behavior Analysis (ABA) is a systemic application of behavioral assessment to elicit the socially undesirable behavior, verbal skills and reasoning skills. The key aspects of ABA include observing the frequency of occurrence of a problematic behavior as well as the antecedents which is responsible to that behaviors and the consequences that follow the behaviors. In this methods behaviorist breaking down desired skills of the child into steps and also teaching the steps through repeated presentation of discrete trials and collecting performance data to evaluate if there should be any changes over time (Prior, 2003).

Baer, Wolf, and Risely (1968) outlined seven essential elements of an ABA-base Program:

1. The program must be applied. The behaviors that one chooses to focus upon should have some social significance.
2. The program must be behavioral. The environment and physical events should be recorded with precision.
3. The program must be analytic. There should be clear and convincing evidence, through carefully collected data, that the intervention is responsible for a change in a behavior.
4. The program must be conceptually systematic. There should be relevance to established and accepted principles.
5. The program must be effective. The program should seek to change the targeted behavior to a meaningful degree.
6. The program should display some generality. A change in behavior should be seen in a wide variety of environments, or should spread to a wide variety of related or similar behaviors.

## **METHODS OF ASSESSMENT**

**Checklists:** A checklist helps to identify the problematic behavior in different areas of functioning. Many researchers developed comprehensive checklist to assess the socially undesirable behavior. Some authors developed problem specific survey scheduled to make detailed assessment.

1. Fear Survey Schedule (Wolpe & Lang 1964): In this scheduled, the client is asked to rate a series of objects and experience in terms of their fear-provoking potential.
2. Cues for Tension and Anxiety Schedule (Cautela, 1973): this scheduled helps to identify the cues which is responsible to arouse tension and anxiety in specific ways.

**Self-assessment:** In this method client evaluate of change in the severity or intensity of behavior. By this method client he is a crucial aspect of evaluating the effectiveness of intervention.

**Observation methods:** In the 1920s and onwards this method gained popularity in the domain of behavior therapy of children. A Systematic observation involves three interrelated

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activities: selection, provocation, and recording or encoding of behavior in the context of a particular setting. There is a large variety of behavioral observation methods which as follows:

1. **Event recording:** This is one of the simplest methods of recording the number of the behavior is recorded by counting them. The observer tallies the number of occurrences of the certain behavior on a recording sheet by the using a writing device or use mechanical devices like wrist counters used by golfers.
2. **Duration Recording:** in this procedure observer record the duration of a specific behavior. Two types of duration recording may be used.

**Duration per occurrence:** this recording requires an observer record the duration of each occurrence of the behavior during a specific observational period.

**Total duration recording:** total duration recording requires the observer to record the total time a child is engaged in a given a task. This is also known as continuous real time recording

**Latency recording:** Latency explains can be explain in the term of temporal gap between the presentation of a stimulus and the onset of a response. Latency recording is required when the immediacy of response initiation is the target of intervention. The response initiation is either delayed or too fast.

**Interval Sampling:** A target behavior recorded at predetermined discrete time intervals is termed as interval sampling. The interval may range form few second to few hours. This sampling provides an opportunity for intensive analysis of moment to moment change in behavior. There are three types of interval sampling methods:

1. **Whole interval sampling** (in which, the behavior under study is present during the entire interval).
2. **Partial interval sampling** (it helps to present some proportion of the interval before it is recorded)
3. **Event-within-interval sampling** (observer records the number of the times the behavior occurs within an interval event sampling)

**Real-time Sampling:** observing a participant continuously for a prolonged period, 30-45 minutes may not feasible always. Further, this may involve a good deal of monotony as well. Due to this, an observer may find difficulty in continuously attending to a specific response.

**Intensity Recording:** intensity is defined as the magnitude, acuteness, amplitude, strength, or force of a response; and clinically, the severity of a response. Some behaviors are considered as problematic because of its intensity. In order to measure intensity of various psycho-physiological signals is transduced through mechanical and electronic devices in order to understand their intensity as well as the duration.

### SUMMARY

behavior assessment is useful to assess the problematic behavior. Behavior assessment has different technique to evaluate the maladaptive behavior. Currently this is very useful for diagnoses and make treatment plan. Behavior assessment has different type of models, which helps to identify the undesirable behavior and what the trigger factor about that behavior. It is wildly use in school, college, clinical and hospital settings. Through this assessment we have collected more information about an individual and also help them.

### ADVANTAGES

1. Behavior assessment helps to make diagnosis and these assessments focuses on determining the nature or course of the client's problem.
2. It helps to found the prognosis of the client's problem. And generating prediction concerning future behavior under specified condition.
3. Behavior assessment helps to plan for treatment or in gathering information that will assist the development and implementation of effective interventions.
4. Behavior assessment helps to evaluate the effect of the treatment.
5. It can be used to improve child development.

### *Limitation of the behavior assessment*

1. Behavioral assessments are difficult to summarize because of the wide diversity of techniques and the difference in assumptions regarding the focus, nature, and causes of behavior.
2. Less relevant in organic conditions: when environmental factors account for a smaller portion of the variance such as in chronic schizophrenia, certain type of headaches, and had injuries.
3. Behavioral assessment is often as subjective as traditional assessment and there is need to include some aspects of traditional assessment.
4. Behavioral assessors have typically rejected the use of norms in the assessment enterprise; criterion-referenced norms can be of inestimable value in assessing behavioral components. s
5. One of the major impediments to the development of standardized measures in the behavioral assessment field is that the conceptual meaning of standardization is often misapprehended.
6. Many behavioral assessors dismissed psycho-metric principles, deeming them irrelevant and inapplicable to behaviorally based assessment strategies.
7. Behavior assessment focus on a specific behavior rather than response classes, response covariations may lead to the formulation of a less than optimal treatment strategy.
8. A final limitation of behavioral assessment is that it often requires extensive resources in terms of time, personnel, and equipment. This is particularly true for psychophysiological and observational methods.

### CONCLUSION

In concluding lines, it can be said that behavioral assessment and formulation has changed considerably in last few decades and new approaches were introduced in due course of time which contributed significantly and provide new insights in understanding complex human behavior. This new understanding of human behavior further helped in developing different strategies to promote healthy behaviors and decreasing/reducing maladaptive behavior patterns. Out of so many types of behavioral assessment and formulation strategies, which one to choose? But functional behavior analysis can be used in school setting as well as in hospital setup, so we can easily identify the maladaptive behavior. Largely depends on the decision of the assessor and the nature of the problem. Despite different limitations behavioral assessment is necessary and important in understanding behavior and in designing appropriate therapeutic strategy. Importance of behavioral assessment has been proved empirically.

## REFERENCES

- Baer, D., Wolf, M., & Risely (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1 (1), 91-97.
- Barrette, B. H., Johnson, J. M., & Pennypacker, H. S. (1986). Behavior: Its units, dimension, and measurement. In R. O. Nelson & S. C. Hayes (Eds) *Conceptual foundation of behavioral assessment*. New York: Guilford Press.
- Bellack, S. A., Hersen, M., & Kazdin, E. A. (1990). *International Handbook of Behavioral Modification and Therapy* (2nd ed.). New York: Plenum press.
- Bornstein, P.H., Hamilton, S.B., & Bornstein, M. (1986). Self Monitoring procedures. In A.R. Cimeinaro, K.S. Calhoun, % H.E. Adams (EDS), *Handbook of behavioral assessment* ( 2nd edition). New York: Wiley.
- Carr, A. C., & Ghosh, A. (1983a). Response of phobic patients to direct computer assessment. *British Journal of Psychiatry*, 142, 60-65.
- Carr, A. C., & Ghosh, A. (1983b). Accuracy of behavioral assessment by compute. *British Journal of Psychiatry*, 142, 66-70.
- Cautela, J. R., (1973). Covert processes and behavior modification. *Journal of Nervous and Mental disease*, 1, 157.
- Cone, J.D., & Hoier, T.S. (1986). Assessing children: the radical behavior perspective. In R.J. Prinz (Ed.), *Advances in behavioral assessment of children and families* (Vol.2, pp. 1-27). Greenwich, CT: Jai press.
- Cooper, J., Heron, T., & Heward, W. (2007). *Applied Behavior Analysis*. New Jersey: Pearson Education.
- Dixon, R. D., Vogel, T., & Tarbox, J. (2012). *A Brief History of Functional Analysis and Applied Behavior Analysis*. Spring science: LLC.
- Goldfried, M. R. (1982). Behavioral assessment: An overview. In A. S. Bellack, M. Hersen, & A. E. Kazdin (Eds.), *international handbook of behavior modification and therapy* (1st ed., pp. 81-107). New York: Plenum Press.
- Gresham, M. F., & Watson, S. T. (2001). Functional behavioral assessment: principles, procedures, and future direction. *School Psychology Review*, 30 (2), 156-172.
- Hayes, S. C., Nelson, R. O., & Jarret, R. B. (1986). Evaluating the quality of behavioral assessment. In R.O. Nelson & S.C. Hayes (Eds.), *Conceptual foundation of behavioral assessment*. New York: Guilford Press.
- Haynes, N. S., Brien, H. W., & Kaholakula, K. A. J. (2011). *Behavior assessment and case formulation*. John Wiley & Sons: New Jersey.
- Jaffe, E. (2010). *A Case Study: Use of Applied Behavior Analysis with an Austistic Adolescent"* (2010). PCOM Psychology Dissertations. Paper 156.
- Jena, S. P. K. (2008). *Behaviour therapy: Techniques, research and applications*. SAGE Publications India.
- Kanfer, F. H. (1985). Target selection for clinical change programs. *Behavioral assessment*, 7, 7-20.
- Kanfer, F. H., & Saslow, G. (1969). Behavioral Diagnosis. In C. M. Franks (Ed.). *Behavior therapy: Appraisal and status*. New York: McGraw-Hill.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J. M Schlien (Ed.) *Research in psychotherapy* (Vol. 3). Washington, D.C: American Psychological Association.
- Lazarus, A. A. (1976). *Multimodal behavior therapy*. New York: Springer.
- Marnat, G. G. (2009). *Handbook of psychological assessment* (5th ed.). John Wiley & Sons: New Jersey.
- Mash, E. J. (1987). *Behavioral assessment of child and family disorder: Contemporary approaches*.

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- Mash, E. J., & Terdal, L. G. (Eds). (1988a), Behavioral assessment of childhood disorders (2nd ed.). New York: Guilford Press.
- Mash, E. J., & Terdal, L. G. (Eds). (1988b), Behavioral assessment of child and family disturbance. In E. J. Mash & L. G. Terdal (Eds), Behavioral assessment of childhood disorders (2nd ed., pp. 3-65). New York: Guilford Press.
- Miltenberger, R. (2008). Behavioral Modification. Belmont, CA. Wadsworth Publishing.
- Nelson, R. O. (1983). Behavioral assessment: Past, present and future. *Behavioral Assessment*, 5, 195-206.
- O. Neill, R., Horner, R., Albin, R., Sprague, J., Storey, K., & Newton, J. (1997). Functional Assessment and Programme Development for Problem Behavior: A Practical Handbook. Pacific Grove, CA. Brooks/Cole Publishing Company.
- Peterson, D. R. (1968). The clinical study of social behavior. New York: Appleton Century Crofts.
- Skinner, B. F. (1953). Science and human behavior. New York: Macmillan.
- Skinner, B. F. (1957). Verbal behavior. New York: Appleton Century-Crofts.
- Skinner, B. F. (1974). About behaviorism. New York: Knopf.
- Sturmey, P., (2009). Clinical case formulation: Varieties of approaches. New Jersey: John Wiley & Sons.
- Wayne, W. M. (1990). Therapeutic reaction for handicapped youth offenders: a Multimodal approach. Curators University of Missouri.
- Witt, J. C., Daly, E. J., & Noell, G. H. (2000). Functional assessments: A step-by-step guide to solving academic and behavior problem. Longmont, CO: Sopris West.

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### ***Conflict of Interest***

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