

## Addressing Neurodevelopmental Disorders in Morocco: Case of Behavioral and Cognitive Therapy

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**Abstract:** The 20th century stood as a turning point in the reflections and practices of psychology and psychiatry, with the emergence of organized psychotherapeutic trends such as behavioral and cognitive therapies. It has been practiced and encouraged for years in the remediation of depression and anxiety disorders, thanks to the work of Aaron Beck and Elise. This research suggests CBTs can be used and applied to manage neurodevelopmental disorders. We have administered a form with a list of questions to 100 psychologists practicing behavioral and cognitive therapies at the national level in Morocco, seeking to validate this hypothesis.

**Keywords:** behavioral therapy, cognitive therapy, neurodevelopmental disorders, mental disorders, depression, anxiety.

### 解决摩洛哥的神经发育障碍:行为和认知治疗案例

**摘要:** 20 世纪是心理学和精神病学反思和实践的转折点,出现了有组织的心理治疗潮流,例如行为和认知疗法。由于亚伦贝克和伊莉丝的工作,多年来一直在实践和鼓励治疗抑郁症和焦虑症。这项研究表明,认知行为疗法可用于治疗神经发育障碍。我们向 100 名在摩洛哥国家层面从事行为和认知疗法的心理学家提供了一份包含问题清单的表格,旨在验证这一假设。

**关键词:** 行为疗法、认知疗法, 神经发育障碍, 精神错乱, 抑郁症, 焦虑症的诊断和统计手册。

## 1. Introduction

Cognitive and behavioral and cognitive therapy, or CBT, is a short-term psychotherapy that began in the late 1920s. These supports are applied to reduce the emotional suffering of people with mental disorders.

Today, cognitive and behavioral therapies are practiced by many therapists, and they are even taught in university training courses dealing with the issue of behavior and cognition.

## 2. Literature Review

CBTs represent a particular clinical approach. It applies scientific psychology to psychotherapy [1].

This psychotherapeutic current includes three components: the first is purely behavioral. It seeks to modify the observable verbal or motor behaviors based on learning theories and models. It is also called the first wave. The 2nd component is called cognitive,

founded by Aaron Beck in 1959; its main purpose is to study information processing and how the executive functions perceive and process facts. The last component is emotional, finding its origins as early as the end of the 1990s. It targets the analysis of the interactions between behaviors, thoughts, and emotions. The main idea of the latter is that acceptance is a prerequisite for change. This idea has given rise to several current trends, such as the theory of mindfulness being a form of meditation and spiritualism, positive psychology founded by Martin Seligman in 1998, and Acceptance and Commitment Therapy (ACT) developed by Steven C Hayes in 1980 [2].

CBTs are then defined as a scientific school seeking to modify behavior and analyze a person's disorder. This results in modifying problems and ways of thinking, alleviating psychological suffering.

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These behavioral and cognitive therapies are recommended in France by the Haute Autorité de Santé. They are distinguished from other therapies by the emphasis placed on the current causes of the problem behavior, the evaluation of lasting behavior change, and the use of various active techniques such as exposure, relaxation, and mediation.

CBT was introduced to Morocco in the late 1990s. However, it was not widely used since the number of psychologists was unimportant, and even the population was confusing psychology and psychiatry and was reserved consulting a psychologist. In early 2000, parents became more aware of the importance of psychological consulting, and it was only then that some psychologists and coaches started using CBT.

### 3. Method

The task force comprises 100 psychologists, including 53% women, with an average of 6 years of experience, and various cities in Morocco. This sample represents 26% of the public sector (university hospitals, centers for treating children with disabilities, the general delegation of prison administration and rehabilitation centers) and 74% of practitioners in the private sector.

Specific training in cognitive and behavioral psychotherapy was received by 81% of these practitioners. This discipline is part of the master's course in psychology carried out at the University of Humanities (35%). Other practitioners have a University Diploma in the Faculty of Medicine and Pharmacy (22%). Still another part of them learned with the Moroccan Institute of Cognitive and Behavioral Therapies (20%). The latter opted for online courses (4%).

Two measuring instruments are used to validate the research hypothesis: Semi-directional interviews with the presidents of the collectives and presidents of the associations of psychologists and clinicians at the Moroccan national level. A Questionnaire consisting of 17 Items, shared digitally with all members of associations and knowledge via social networks despite the barriers of Covid-19. The questionnaire was administered mainly personally and the rest online.

## 4. Results

The results section deals with three main points: Disorders applying CBT as a remedy for mental disorders, management of neurodevelopmental disorders via CBT, and measurement of the degree of satisfaction and difficulties with the CBT as well as its obstacles felt by the psychologist's subject to research.

### 4.1. CBT and Mental Illness

Several scientific studies have endorsed and validated the management of mental illness through

behavioral and cognitive psychotherapy. This research contributes to the science, although CBT is recommended for people with psychological disorders due to 26% for anxiety and 21% for depressants. The second category is personality disorders, represented by 13%, and schizophrenia at 9%. Regarding disorders related to stress, sleep, diet, or addictions, the recommendations of psychologists remain less than 10%. Figure 1 shows the classification of mental disorders in Morocco.

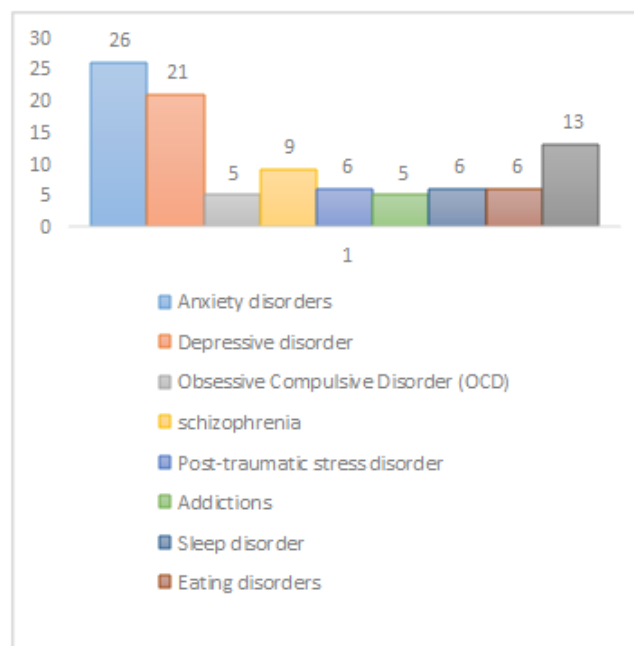


Fig. 1 The following table breaks down the areas of application of Moroccan psychologists according to the typology of mental disorders from the DSM 5

### 4.2. CBT Success in Neurodevelopmental Disorders

All experienced psychologists have a history of practicing TBI as psychotherapy for children and youth suffering from neurodevelopmental disorders. However, according to the responses of these practitioners, only 46% admitted that CBT was an effective means of alleviating the psychological and emotional suffering of those affected. In addition, Figure 2 represents the contributions of CBT as a remedy for neurodevelopmental disorders.

Neurodevelopmental disorders occur during development, often in pre-school and primary (0-7 years). They lead to a delay or a deficit in mental and cognitive development, with consequences for the personal, social, academic, and professional aspects.

The results show that children between the ages of 5 and 8, representing 19% of patients, are the most diagnosed and treated by psychologists who have used CBT as therapy. Children aged 9 to 12, making 16%, are ranked second. Adolescents and adults account for only 2% of those needing this type of treatment.

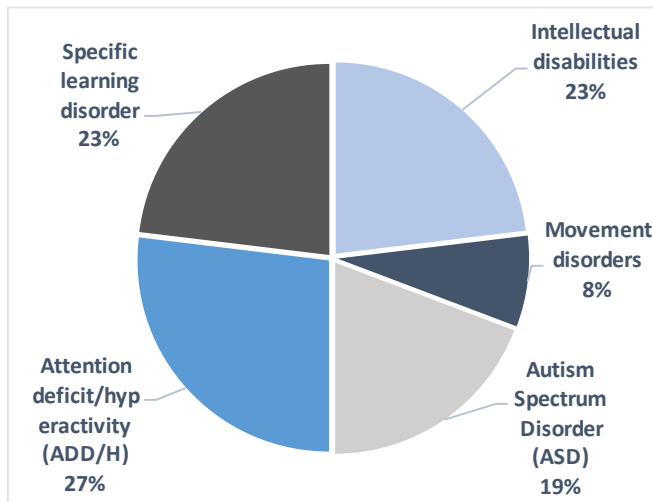


Fig. 2 Neurodevelopmental disorders successfully treated by psychotherapists through CBT

#### 4.3. CBT Challenge and Alternative Therapies

According to our study, 18% of the psychologists interviewed said that CBT was very successful compared to other approaches. 31% expressed moderately satisfactory results. 11% said they were not at all satisfied with the results obtained. Figure 3 illustrates psychologists' satisfaction levels following behavioral and cognitive management of neurodevelopmental disorders.

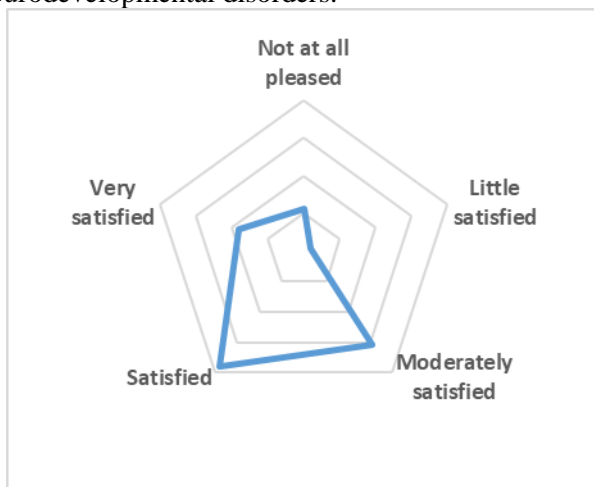


Fig. 3 The level of satisfaction of psychologists with CBT

Although behavioral and cognitive therapies have endorsed their effectiveness in neurodevelopmental disorders, it is necessary to mention that psychologists put essential efforts into preparing and implementing this kind of psychotherapy. As a result of this research, we found that half of the psychologists found CBT difficult to implement and to produce quick results. On the other hand, only 11% say that using CBT is easy as a remedial tool for people with neurodevelopmental disorders. Table 1 shows factors affecting CBT application.

Table 1 CBT application challenge factors

Hardship Factors	Technicality of the therapy	18%
	Patient engagement	19%
	Duration of support	8%
	Keeping pace with progress	31%
	Awareness of parents/guardianship	5%
	Prevention of relapse	15%
	Pick-up rate	4%

This is due to three main factors, according to the statements of the psychotherapists interviewed: the first shows that 31% are caused by the respect for the progression rhythm, 19% are related to the commitment of the patient(s), and 18% follow the technicality of the therapy. Other factors also affect this management, such as the awareness of parents/guardians, relapse prevention, and management duration.

Moreover, psychologists suggest another moderately easy and efficient approach as an alternative to systemic psychotherapy and psychoanalysis, ranked first. Next comes transactional analysis, a person-centered approach, and humanistic psychotherapy.

## 5. Discussion

Harmonizing with the results section, we analyze three subsections as follows.

### 5.1. CBT and Mental Illness

Although several studies dealt with mental disorders, the results indicate that anxiety disorders and depression disorders represent the highest rate of consultations requiring cognitive and behavioral psychotherapy primarily reverts to anxiety disorders and depression.

Indeed, the term "depression" is very old since it entered the medical language in the 18th century. It was developed by Seligman and then by Aaron Beck in 1996 (Beck Depression Inventory, BDI). Later depressive disorders were singled out.

This percentage of CBT intake in depressive and anxiety disorders results in the fact that CBT is the most recommended as it helps the patients to refocus on positive thoughts and sensations that are generally ignored in the depressive phase. In addition, they will help the person reconsider his position and pessimistic view of things [3]. Several techniques are valid to do this, such as Socratic questioning, Beck's columns, and

exercises between sessions to verify the lasting behavior change.

Personality disorders were studied in [4], where a model and a therapeutic manual of personality disorders according to the DSM 3 and DSM 5 were proposed. Admittedly, psychologists believe these personality disorders are among the most difficult mental disorders to treat via the old psychotherapies. However, thanks to Behavioral and Cognitive Therapies, more specifically Dialectical Behavioral Therapy (DBT), the CBT practitioner will seek to validate and accept the person's experience while focusing on change. With the help of good functional analysis, interpersonal techniques, and maintenance strategies, the psychotherapist can act and modify disturbed cognitive patterns and thus solve problems.

## 5.2. CBT Success in Neurodevelopmental Disorders

One of the fundamentals of behavioral and cognitive therapies is the theory of learning: a behavioral analysis. As a result, CBT will enable people with neurodevelopmental disorders to better understand their environment and increase attention and motivation in acquiring knowledge and learning. In addition, they are intended to support social integration and the development of self-sufficiency.

This research shows that children and youth with ADHD (difficulty organizing and maintaining sustained attention) account for 27% of the neurodevelopmental disorders managed by CBT. Trying not to repeat the inappropriate behaviors in such a situation, the psychotherapist will help the patient to modify his so-called bad or problematic behaviors with more appropriate behaviors using organizational and learning methods [5]. CBT is still usable in managing ADHD. It helps patients and parents/guardians understand the disorder. This makes it possible for the patient to behave and adapt learning strategies.

Our study identified 23% of learning disabilities as among the most diagnosed neurodevelopmental disorders requiring psychological management. Since most children and youth with this type of disorder experience critical situations such as loss of self-esteem, sleep, eating even worse phobias, obsessive and compulsive disorders (OCD), anxiety, and depression due to the look of their environment (peers, families, society).

The most recommended forms of psychotherapeutics in these situations include behavioral and cognitive therapies, providing brief and collaborative treatments. With the help of CBT, the psychotherapist will allow the patient to develop his communication and put problem-solving strategies in place. Support for psychoeducation, positive reinforcement, and a reward from parents also seem essential. The emotions felt and the thoughts of the patient with learning disabilities greatly impact the

patient's way of being in his environment, which is why emotional techniques intervene, such as relaxation, mediation, and training in social skills, in order to lead to positive thoughts, translate into a change in behavior.

The third category includes intellectual developmental disabilities, also called intellectual disabilities according to DSM 5, with a similar percentage as learning disabilities. These people diagnosed with mental retardation or intellectual disability have cognitive difficulties, in particular, translated by difficulties in encoding the information processing. Moreover, CBT should be applied as a cognitive remedy for cognitive abilities and behavioral disorders.

## 5.3. CBT Challenge and Alternative Therapies

Applying innovative techniques and scientific methods through behavioral and cognitive therapies has played an important role in recognizing and validating this psychotherapeutic school.

This feeling of satisfaction among psychologists and the issue of the effectiveness of CBT have many issues, including the fact that CBT is brief, lasting between eight and twenty weeks, while respecting the therapist's rate of progression and instructions. Active therapy is focused on goals established with the patient. It is a matter of producing a psychic change and a general accomplishment and resolving problematic situations here and now.

However, the overall effectiveness of behavioral and cognitive psychotherapies should not obscure their complexity and diversity. The first factor is the rate of progress. Insofar as the therapist follows a method and participatory action plan with the patient, it seems essential to respect the sequence of several steps in psychotherapy to aim for lasting changes in the patient.

The second factor depends on the patient's commitment and ability to engage in change (Motivation). In this respect, there are two levels of commitment. On the one hand, the awareness of the Souffrant disorder and the presence at the different sessions. On the other hand, commitment in the application of exercises between sessions.

Other psychologists find that the technicality of the therapy may be a factor in its success or failure by justifying that it was first necessary to be well trained in the techniques of CBT and its various current trends such as acceptance and engagement therapy. In addition, the therapist's time devoted to functional analysis and therapeutic alliance, as well as the preparation of sessions and exercises of application, requires a great effort of concentration and planning.

## 6. Conclusion

### 6.1. Main Results of This Study

There is no doubt that a number of clinical studies and research have tested the efficacy of behavioral and cognitive therapies in managing mental health problems, specifically anxiety and depression.

This research highlighted the importance of CBT for patients with neurodevelopmental disorders, with a success rate exceeding 60%. CBT is most recommended for attention disorders with or without hyperactivity and learning disabilities. School children aged five to twelve are known as the most frequent category, requiring CBT application and behavioral and cognitive management. The objective is to positively change these children's negative beliefs and thoughts to promote learning new behaviors.

In this case, several factors come into play, impacting the success rate of this management, including the patient's respect for the pace and progress of the sessions and his commitment to a collaborative and participatory approach with the therapist. In addition, factors still related to the practices of the psychotherapist impact the prevention of relapse, the technicality of the therapy, and respect for its method.

The psychologists interviewed propose using the system approach or psychoanalysis as an alternative to remedy the psychological suffering of children and youth with neurodevelopmental disorders. Transactional analysis or the person-centric approach can also be useful for this category of mental disorder but in smaller percentages.

### 6.2. Comparison with Other Studies

Until the publication date of this article, no scientific study had been carried out concerning the effectiveness of CBTs for mental disorders. Admittedly, several scientific studies, articles, and books have dealt with the theme of children and adolescents with learning disabilities, either at the level of collecting a database or explaining the care process. Other research has also emerged concerning the contributions of cognitive and behavioral therapies. Our modest subject will be the first of its kind, unless the authors are mistaken, seeking to verify the practices of psychologists and psychiatrists in cognitive and behavioral therapies with the target of children and young people with neurodevelopmental disorders.

### 6.3. Strengths and Limitations

Among the strengths of our research, we cite the pioneering scientific article addressing the cause-and-effect relationship between CBT and neurodevelopmental disorders, qualitative results,

including the extent to which the research questionnaire was shared with a representative sample. However, the work also has limits, such as the lack of results from other countries with the same level of education as Morocco, lack of statistics on the state of play of children and adolescents with neurodevelopmental disorders, difficulties in questioning all the organizations and associations active in the field of psychology, and the minority of psychologists and psychiatrists trained specifically in CBT.

### 6.4. Recommendation and Axis of Future Research

The limitations of the research are reflected as areas for future research. It is planned to identify neurodevelopmental disorders in Morocco, create a database of all those involved in the care of children and adolescents with neurodevelopmental disorders, search for the particularities between the sexes of this target, and design specific training for teaching staff to raise awareness and anticipate the care process.

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