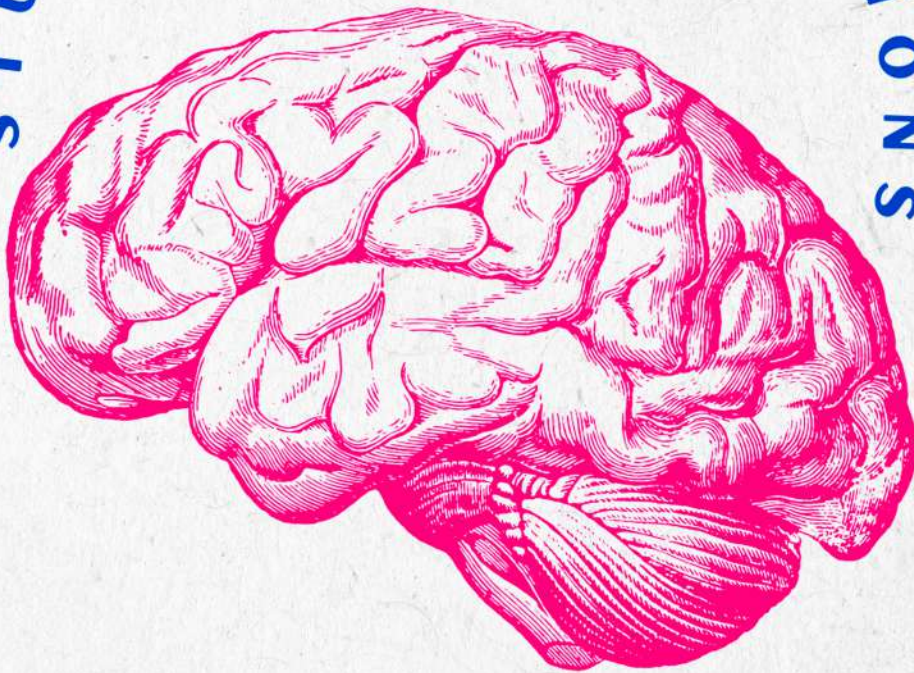


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PRESENTATION

Psychology is a field of knowledge in which different disciplines intertwine to form a greater whole. **Contemporary Psychology: Studies and Applications** is a work that expands this interconnection, bringing together 6 articles on various topics, written by experts from different areas of knowledge.

Developed by **Seven Publications**, this book presents a broad overview of the challenges, discoveries and advances in fields such as anxiety, autism spectrum disorder, animal-assisted therapy and much more.

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CALM, MAP, STRENGTHEN AND RESOLVE (C.M.S.R): A BRIEF INTERVENTION PROTOCOL FOR ANXIETY

ACALMAR, MAPEAR, FORTALECER E RESOLVER (A.M.F.R): UM PROTOCOLO DE INTERVENÇÃO BREVE PARA ANSIEDADE

CALMAR, MAPEAR, FORTALECER Y RESOLVER (A.M.F.R): UN BREVE PROTOCOLO DE INTERVENCIÓN PARA LA ANSIEDAD



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Paulo Zago Neto¹

ABSTRACT

The topic of anxiety has been widely studied in the field of science as a complex emotional response, involving physiological, cognitive and behavioral components (Barlow, 2002). Most traditional therapeutic approaches prioritize the symptomatic management of anxiety, where the majority only treat the effects of anxiety, but do not address, in a structured way, the generating cause, thus leaving aside the assumption that for there to be an effect, there must be a cause. This article intends to present an original therapeutic protocol, called “Calm, Map, Strengthen and Resolve” (A.M.F.R.), developed based on the literature in the area and based on the clinical practice of the author of this text. This therapeutic protocol model for combating anxiety is based on the assumption that anxiety is not a cause, but only an effect — where it presents itself as a sign that there are conflicts, real or imaginary, that need to be identified and resolved. The A.M.F.R protocol proposes four progressive steps, where the successor step depends on the predecessor step. The four steps are: CALM – MAP – STRENGTHEN – RESOLVE. The text was structured in order to explain what the aforementioned Protocol is, on what criteria it is organized and developed, in addition to presenting some practical cases that demonstrate its effectiveness and functionality. In short, we hope to contribute to publicizing this effectiveness, highlighting the advantages of applying and replicating the Protocol in other contexts, as it has proven to be a powerful resource for overcoming anxiety.

Keywords: Anxiety. Psychology. Protocol. Therapeutic. Cause. Solve.

RESUMO

O tema ansiedade tem sido amplamente estudado no campo da ciência como uma resposta emocional complexa, envolvendo componentes fisiológicos, cognitivos e comportamentais (Barlow, 2002). A maior parte das abordagens terapêuticas tradicionais prioriza o manejo sintomático da ansiedade, onde se trata em sua maioria apenas os efeitos da ansiedade, mas não se aborda, de forma estruturada, a causa geradora, deixando assim de lado o pressuposto de que para existir um efeito, é necessário que exista uma causa. O presente artigo tem a intenção de apresentar um protocolo terapêutico original, denominado “Acalmar, Mapear, Fortalecer e Resolver” (A.M.F.R.), desenvolvido com base na literatura da área e a

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partir da prática clínica do autor deste texto. Este modelo de protocolo terapêutico de combate à ansiedade, parte do pressuposto de que a ansiedade não é causa, mas apenas um efeito — onde ela se apresenta como um sinal de que existem conflitos, reais ou imaginários, que precisam ser identificados e resolvidos. O protocolo A.M.F.R propõe quatro passos progressivos, onde o passo sucessor, depende do passo antecessor. Os quatro passos são: ACALMAR – MAPEAR – FORTALECER – RESOLVER. O texto foi estruturado de modo a explicitar o que é o referido Protocolo, em quais critérios ele se organiza e se desenvolve, além de apresentar alguns casos práticos que evidenciam a sua eficácia e funcionalidade. Em suma, espera-se contribuir para divulgar essa eficácia, evidenciando as vantagens da aplicação e réplica do Protocolo em outros contextos, uma vez que ele tem se mostrado um potente recurso para a superação da ansiedade.

Palavras-chave: Ansiedade. Psicologia. Protocolo. Terapêutico. Causa. Resolver.

RESUMEN

El tema de la ansiedad ha sido ampliamente estudiado en el campo de la ciencia como una respuesta emocional compleja, que involucra componentes fisiológicos, cognitivos y conductuales (Barlow, 2002). La mayoría de los enfoques terapéuticos tradicionales priorizan el manejo sintomático de la ansiedad, donde la mayoría solo trata los efectos de la ansiedad, pero no aborda, de manera estructurada, la causa generadora, dejando así de lado el supuesto de que para que haya un efecto debe haber una causa. Este artículo pretende presentar un protocolo terapéutico original, denominado “Calmar, Mapear, Fortalecer y Resolver” (A.M.F.R.), desarrollado con base en la literatura del área y con base en la práctica clínica del autor de este texto. Este modelo de protocolo terapéutico para combatir la ansiedad se basa en el supuesto de que la ansiedad no es una causa, sino sólo un efecto, donde se presenta como una señal de que hay conflictos, reales o imaginarios, que deben identificarse y resolverse. El protocolo A.M.F.R propone cuatro pasos progresivos, donde el paso sucesor depende del paso predecesor. Los cuatro pasos son: CALMA – MAPA – FORTALECER – RESOLVER. El texto se estructuró con el fin de explicar qué es el mencionado Protocolo, bajo qué criterios se organiza y desarrolla, además de presentar algunos casos prácticos que demuestran su efectividad y funcionalidad. En definitiva, esperamos contribuir a dar a conocer esta eficacia, resaltando las ventajas de aplicar y replicar el Protocolo en otros contextos, ya que ha demostrado ser un poderoso recurso para superar la ansiedad.

Palabras clave: Ansiedad. Psicología. Protocolo. Terapéutico. Causa. Resolver.

1 INTRODUCTION

Anxiety is a universal emotion, often associated with perceptions of threat and activation of the autonomic nervous system (Beck & Clark, 1997; Barlow, 2002).

Mental health-related problems have been related to multiple social, cultural, economic, and environmental factors. The social, educational and work contexts and access to health services can be identified as psychosocial and environmental stressors. (COSTA et al., 2019, p.4)

Brazil is often cited as the country with the most anxious people in the world, according to the World Health Organization (WHO), with 9.3% of the population affected (18.6 million) in 2019 data. According to this Organization, the global prevalence of anxiety and depression increased by 25% in the first year of COVID-19.

The Covitel survey (June, 2023) indicated a 26.8% prevalence of anxiety in Brazil, higher among women (34.2%).

Another recent survey by the Cactus Institute and AtlasIntel (Cactus Institute, June 2023) showed that 68% of Brazilians report feelings of nervousness, anxiety, and tension, but more than half (55.8%) have never sought professional help.

When it becomes chronic, the manifestations of anxiety can impair the ability to perform daily activities. Performing tasks that were once simple, such as leaving the house, going to work, or interacting with other people, become challenges. Low concentration, procrastination, and fear of making mistakes can result in underwhelming performances. Similarly, excessive worry can also lead to social isolation and damage friendships and family relationships. (Albert Einstein Hospital, 2025).

Within the study of anxiety, some theoretical models describe the mechanisms that maintain anxious states, including cognitive distortions, avoidance responses, and behavioral avoidance (Ellis, 1962; Lazarus & Folkman, 1984). However, unfortunately, most existing clinical protocols tend to focus only on the symptomatic control of anxiety, and not on the effective resolution of its cause. It would be very wrong and dishonest to say that the traditional model does not bring any improvement to the patient's life, and it is very clear that it does, after all there are decades of research, where psychology professionals have been helping people to deal with anxiety in their lives. However, as previously mentioned, in most cases, this improvement does not tend to become permanent in the long term because, as the cause has not yet been resolved, it will tend to continue bringing anxiety to this patient's life.

Throughout my years of clinical practice, I have reached the mark of more than seven thousand five hundred hours of individual care, where I could realize that anxiety is not a cause — but that it is only an effect and I have concluded that, when the person discovers and faces what is generating anxiety in their life, The symptom loses strength and tends to disappear.

My intention with this article is to present a new alternative and structured therapeutic model, the Anxiety Protocol that I have named the **A.M.F.R. Protocol.**, a model that I have been testing for years within clinical practice and that has offered a much more practical, brief and resolute path in the fight against anxiety, a model that is based on both scientific literature and clinical experience, through application with patients with the most varied complaints of anxiety.

2 OBJECTIVE

My objective with this article is to demonstrate the effectiveness of the A.M.F.R. Protocol, developed by me, which has shown great promise in the face of the anxiety that I have helped my patients to face in the most varied areas of their lives.

It is possible to see that the A.M.F.R Protocol is effective, both for the patient who suffers from anxiety on a daily basis, caused by specific situations, and for patients who suffer from T.A.G (Generalized Anxiety Disorder), anxiety crises and even patients who suffer from panic attacks, because the A.M.F.R Protocol begins with the patient learning to use validated techniques to calm down and goes to the final apex, which is when he feels ready to face the causes of anxiety in his life. In addition, the Protocol contributes to the individual being able to experience relief and the feeling that he is the one who controls his life and is not controlled by anxiety and its effects.

Table 1

Table of the expected schedule of the a.m.f.r protocol

STEP	NAME	MAIN OBJECTIVE	EXPECTED RESULT
STEP 1	Calm down	Emotionally stabilize the patient and control the crisis	Immediate reduction of anxious response
STEP 2	Map	Identify the real causes, whether internal or external, real or unreal	Clarity about the source of the anxious symptom
STEP 3	Strengthen	Acquire skills and resources to deal with the cause of anxiety	Development of emotional autonomy and practice of new resources
STEP 4	Solve	Confront and eliminate the root of anxiety (address the cause)	Sustained reduction of anxiety and breaking the cycle of anxiety

Source: Authors.

3 THEORETICAL FRAMEWORK

Classical studies describe anxiety as an adaptive response to perceived threats (Clark & Wells, 1995), originating from interactions between cognitive, emotional, and environmental factors (Lazarus & Folkman, 1984).

In clinical practice, this response often manifests itself in intense crises, feelings of lack of control, and avoidance patterns (Beck & Clark, 1997).

Traditional approaches — such as CBT (Cognitive-Behavioral Theory), TREC (Rational Emotive Behavioral Therapy) and mindfulness techniques — have proven effective for symptomatic management and psychoeducation (Beck, Ellis, Kabat-Zinn), however, few protocols structure a step-by-step process that takes the patient from emotional regulation to concrete resolution of the cause.

In this scenario, **Protocol A.M.F.R.** It emerges as an original contribution, offering a practical model where it integrates emotional stabilization, identification of the cause, strengthening and coping with the cause that generates anxiety, focusing on the patient's autonomy over their own life and on the resolution of the conflict.

4 METHODOLOGY: THE A.M.F.R. PROTOCOL

The A.M.F.R. Protocol was developed based on clinical experience with more than seven years in the care of the most varied types of patients and with different degrees of anxiety. The protocol is theoretically based on the understanding that anxiety is not a cause, but only an effect, where the human brain, faced with a possible perceived threat, ends up reacting in flight and avoidance mode to get rid of this possible danger, thus triggering all known symptoms, where each patient experiences them in different ways and intensities.

Regardless of the cause of anxiety in the patient's life, the symptoms and even their intensity, the A.M.F.R. Protocol has proven to be a great tool in the management of anxiety, as it is not limited to treating only the symptoms, but each of the causes of anxiety in the patient's life. Of course, each patient will experience the A.M.F.R. Protocol in a completely different way, as we need to take into account the level of anxiety symptoms experienced by him, his ability to look at himself and his life so that he can be able to map the causes of his anxiety, the level of preparation he has, that is, the resources, both internal and external that he carries with him, that have been built throughout his life (this determines the level of strengthening that this patient will need to develop to obtain resources and courage to face the causes of his anxiety). Finally, depending on the cause of your anxiety, it will be easier or more difficult to solve it, taking more or less time to do so. Even in the face of all these variables, the A.M.F.R. Protocol is effective, as it follows a logical line of reasoning that leads

the patient through a step by step that is totally possible to be put into practice within the scope of the therapeutic process.

Step 1 – Calm down: in this step, the search is for emotional stabilization of the patient who is in a state of anxiety, through techniques developed so that he becomes able to calm down.

I want to describe here one of the techniques that I most often teach my patients within the A.M.F.R. Protocol for the management and reduction of anxious symptoms, is the Technique entitled "5,4,3,2,1", widely taught and disseminated among psychology professionals, a technique that consists of helping the patient to take his attention away from the point of tension that is causing him anxiety and put it in other things and places, using the five sense organs, Sight, Touch, Hearing, Smell, and Taste. In this technique I lead him to observe and describe: 5 things he can see (vision); 4 things he can feel (touch); 3 things he can hear (hearing); 2 things he can smell (smell); 1 thing he can taste (taste).

Depending on the intensity of the anxious symptoms experienced by him, the patient can repeat this sequence of actions more than once using his five sense organs, which almost always brings very positive and significant results in the management of anxious symptoms, because when he begins to describe the environment, he tends to take his attention away from the focus of tension and begins to disperse this "energy" of fight and flight, thus being able to "Calm Down".

Step 2 – Map: in this step, the search is to identify the cause, find out what are the elements that cause anxiety in this patient's life. The interesting thing here is to understand that the element that can be the cause of anxiety today may not be a month from now. Example: Perhaps the mapped cause of anxiety in the patient today is a problem in the marital relationship, a problem that may have been solved with a conversation, a request for forgiveness or even a change in behavior on the part of those involved, thus causing the disappearance of the anxiety-causing factor.

Step 3 – Strengthen: in this step, the search is for the acquisition of resources, skills and knowledge that the patient does not have today, so that he can be able to fulfill step number 4, which is to "Solve" the causes of his anxiety. Example: Perhaps the cause of anxiety in this patient's life is financial problems, so in order for him to fight this anxiety and be free of it, he needs to learn to deal with his financial life, he needs to learn to deal with money, negotiate or renegotiate debts if this is the case, or even, learn how to make the family budget fit within the earnings.

Step 4 – Solve: in this final step, the intention should be to encourage the patient to face and solve everything that has caused anxiety in his life, since now the causes of anxiety

are no longer hidden from his eyes and he has also acquired tools that have strengthened him to face such causes. The idea here is to provoke and encourage confrontation with caution, so that such confrontation is not a cause of more anxiety for this individual.

5 RESULTS AND DISCUSSION

A.M.F.R. differs from traditional protocols in that it leads the patient to the problem-solving process of anxiety. Approaches such as CBT and TREC offer valuable tools for cognitive understanding and symptomatic management (Beck & Clark, 1997; Ellis, 1962), but do not clearly structure a stage of practical resolution. This gap, already recognized in part of the literature (Barlow, 2002; Clark & Wells, 1995), is filled by the A.M.F.R., which integrates psychological technique with concrete action, promoting autonomy and changes that tend to be sustainable in the patient's life.

In clinical practice, patients who go through the four stages report a reduction in the frequency and intensity of anxiety crises, a greater sense of control, the development of skills, and a decrease in avoidance patterns.

In my clinical experience, what makes the most difference within the four steps of the A.M.F.R. Protocol is the step where the patient is led by the professional psychologist to have the courage to "Solve" (face) the cause of his anxiety, but of course, this only after performing step number three, which is to Strengthen the patient for such action. Given the importance of the patient having the courage to face and "Solve" the cause of their anxiety, I will bring here two reliable reports that happened to my patients while I was applying the A.M.F.R. Protocol to them within the therapeutic process in which they were attended by me.

6 APPLICATION OF THE PROTOCOL IN CLINICAL CASES

In this successful case against anxiety using the A.M.F.R., it is possible to perceive the importance of the patient not only learning mechanisms and techniques to just "Calm down", but also to "Solve" the causes as well:

Once I saw a woman who had become my patient because of a *live* broadcast on one of my social networks, nothing I taught her, none of the techniques I presented became effective in the fight against Anxiety, and as the sessions went by I started to get uncomfortable, because I know that what I teach works, because it has already worked and helped hundreds of people in various parts of the world and in almost all states of Brazil, that is, they were all methods validated over the years within my clinical practice experience.

I work initially with my patients with packages, where each package lasts for 10 weeks, or 10 sessions, and that woman was already on our seventh date and nothing seemed to

minimize the anxiety she felt as I mentioned above, until that day, by chance, while I was receiving her to start our session, I asked a question about a person she and I knew in common, and at that moment, when she heard that name, immediately her countenance changed, and she said that she couldn't take it anymore and that she needed to tell me something that she hadn't yet had the courage to tell anyone about that person.

When this patient told me that she needed to tell me something that she had not yet had the courage to tell, I confess that I was excited, but I also confess that I was afraid of what could come, and in fact something complicated came for any psychology professional to hear. One of the types of reports that saddens me the most: child sexual abuse.

She told me that that person I had asked about had sexually abused her in childhood and even today in adulthood this still disturbed her, still caused a very great sense of injustice, which it is! I confess that what that young woman told me aroused two feelings in me.

1st Feeling: anger and indignation for what someone had done to her, because no person in the world deserves to be violated in their rights over their own body, especially a child.

2nd Feeling: relief and hope. These two feelings made sense, because now I had just found what had been generating anxiety in that woman for years. I had just managed to "Map" (the second step of the A.M.F.R. Protocol). Because she had never talked that way about the abuse with anyone before me, she had built up a lot of "emotional pressure" for years, and that emotional pressure eventually led to anxiety. I like to think that emotional pressure works like a spring, which when pressed, tends to return to its original state, causing impacts on the environment around it. Because of the abuse, the emotional pressure had been forcing her "emotional spring" down for at least 20 years, a spring that from time to time "escaped", causing her to experience terrible bouts of anxiety.

When she finally told me, I had in my hands the map of what to do with her and how to act, and that's exactly what I did, and the result was that her anxiety ended, and the reason it ended was because, by talking about the event of the past, she and I together were able to "Map" the causes of her Anxiety, thus, through the techniques, she felt emotionally strengthened to face and "Solve" everything that was bringing emotional pain to her. Through what I taught, she was able to resignify the past, let go, "let go of the spring" and also to first forgive herself for having kept it a secret about it for so long and also forgive those who had done that atrocity to her. In other words, her anxiety is over because she has solved the causes of the anxiety. I think it is interesting to point out here that the process of forgiveness and self-forgiveness were essential in her case, and she did not forgive the abuser because

he deserved to be forgiven, but because she discovered that she deserved to be free from all the pain that his actions brought to her – and the path she found was forgiveness.

I reinforce here that yes, it is possible to lead our patients to practice the A.M.F.R. Protocol, because through it we can follow a simple and coherent step-by-step capable of helping our patients to get rid of anxiety in their lives.

In this case of defeat against anxiety, it is possible to realize the importance of the patient not only learning mechanisms and techniques to "Calm down", but also to "Solve" the causes as well, because when this does not happen, anxiety tends to remain there.

I remember a real case, where a patient, a Brazilian woman who lived in France, came to me through the internet asking for help in relation to anxiety. Already in the first session I remember that I taught her some techniques on how to "Calm down" an Anxiety crisis and from one session to the next it was possible to notice a clear improvement, given the fact that by practicing what she was taught she quickly began to be able to "Calm down" in the moments where she felt Anxiety. In the subsequent sessions, I began my work of investigation and mapping of what was really the cause of her anxiety, and it didn't take long for it to come to light that the real cause of her anxiety was a very serious relationship problem with her mother. She suffered from this relationship with her mother since she was little, and the hurts she had accumulated in relation to this person, over the years, began to weigh down, bringing a lot of sadness, anguish and, consequently, anxiety.

According to the patient's reports, her relationship with her mother was practically beyond repair, and due to professional ethics I cannot offer many other details about what had happened between them, but I can assure you that the situation was really very complicated; In addition to everything that had already happened throughout their lives, in the last three years the mother had taken custody of two of the three children of this patient of mine, thus generating a real emotional abyss between them.

When we mapped out together that the cause of her anxiety was due to the relationship with her mother and the hurts that were being accumulated, I began to encourage her to start the process of solving the real problem, which at that moment focused on the amount of hurts accumulated in relation to the mother. Once this was done, I began to present her with the solution, which at that moment would be to strengthen her (third step of the A.M.F.R. Protocol) to be able to forgive her mother for everything bad she had done to her.

It is obvious that, according to the perception of my patient, the mother did not deserve her forgiveness (here I make it clear that forgiveness does not invalidate anything that happened), but that forgiveness, as studies and literature point out, has the power to generate

the ability in those who practice it to no longer let themselves be affected by what happened to them, And this was precisely my proposal to my patient.

In this case reported here, the mapped cause of her anxiety according to the A.M.F.R. Protocol was the lack of forgiveness in relation to the mother, and with that the search for strengthening was started by me immediately, but when we arrived at the fourth step of the A.M.F.R. Protocol, the patient did not show interest in "Solving" what caused her anxiety, which resulted in a negative experience for herself at that moment, as the anxiety remained there, since the cause had not yet been resolved.

7 CONCLUSION

The understanding of anxiety as an effect, and not as a cause, opens space for new forms of intervention.

The A.M.F.R. protocol — Calm, Map, Strengthen and Resolve — presents a practical, structured and problem-solving approach, based on consolidated theoretical foundations and real clinical experiences.

This model represents an original contribution to contemporary clinical psychology, offering therapeutic clarity, applicability in different contexts, and potential for international diffusion, and this is my intention with this article, because the suffering in people's lives due to anxiety is both intense and real, because for Freitas et al. (2024, p.647) recent studies indicate a high incidence of anxiety disorders and depression, making it essential to understand the factors that contribute to these mental health problems.

I am sure that the A.M.F.R. Protocol, created by me through my clinical practice, is not the only model, but it can become a model adopted by other professionals, in order to bring more health and quality of life to our patients who are real people, experiencing real situations in their lives.

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EVIDENCE-BASED PSYCHOLOGICAL PRACTICE: A HISTORICAL PERSPECTIVE BASED ON PAST AND PRESENT

PRÁTICA PSICOLÓGICA BASEADA EM EVIDÊNCIAS: UM RECORTE HISTÓRICO COM BASE NO PASSADO E NO PRESENTE

PRÁCTICA PSICOLÓGICA BASADA EN LA EVIDENCIA: UNA PERSPECTIVA HISTÓRICA FUNDAMENTADA EN EL PASADO Y EL PRESENTE



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ABSTRACT

Evidence-Based Psychological Practice (EBPP) represents a fundamental milestone in consolidating psychology as an applied science, integrating scientific evidence, clinical expertise, and patient preferences. This article presents a literature review on the historical evolution and current state of EBPP, covering 1999-2025. A systematic search was conducted in SciELO, PubMed, Google Scholar, ArXiv, Redalyc, PePSIC, and PsycNet databases. Thirty-two articles were selected and organized into five thematic categories: concepts and historical foundations, treatment efficacy, large-scale implementation, barriers and resistance, and Brazilian and Latin American context. Analysis revealed that EBPP evolved from a restricted list of empirically supported treatments to an integrative model valuing therapeutic relationship and cultural adaptation. Programs such as IAPT in England demonstrate feasibility of large-scale implementation. In Brazil, recent growth in scientific production is observed, but gaps persist in professional training and implementation barriers. EBPP constitutes an ethical and scientific imperative, demanding investments in training, research, and public policies in the Brazilian context.

Keywords: Evidence-Based Practice. Psychotherapy. Clinical Psychology. Efficacy. Implementation.

RESUMO

A Prática Psicológica Baseada em Evidências (PPBE) representa um marco fundamental na consolidação da psicologia como ciência aplicada, integrando evidências científicas, expertise clínica e preferências do paciente. Este artigo apresenta revisão de literatura sobre a evolução histórica e estado atual da PPBE, abrangendo o período de 1999 a 2025. Realizou-se busca sistemática nas bases SciELO, PubMed, Google Scholar, ArXiv, Redalyc, PePSIC e PsycNet. Foram selecionados 32 artigos organizados em cinco categorias temáticas: conceitos e fundamentos históricos, eficácia de tratamentos, implementação em

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larga escala, barreiras e resistências, e contexto brasileiro e latino-americano. A análise revelou que a PPBE evoluiu de lista restrita de tratamentos empiricamente apoiados para modelo integrativo que valoriza relação terapêutica e adaptação cultural. Programas como o IAPT na Inglaterra demonstram viabilidade da implementação em larga escala. No Brasil, observa-se crescimento recente na produção científica, mas persistem lacunas na formação profissional e barreiras à implementação. Conclui-se que a PPBE constitui imperativo ético e científico, demandando investimentos em formação, pesquisa e políticas públicas no contexto brasileiro.

Palavras-chave: Prática Baseada em Evidências. Psicoterapia. Psicologia Clínica. Eficácia. Implementação.

RESUMEN

La Práctica Psicológica Basada en la Evidencia (PPBE) representa un hito fundamental en la consolidación de la psicología como ciencia aplicada, integrando evidencias científicas, experiencia clínica y preferencias del paciente. Este artículo presenta una revisión de literatura sobre la evolución histórica y estado actual de la PPBE, abarcando 1999-2025. Se realizó búsqueda sistemática en las bases SciELO, PubMed, Google Scholar, ArXiv, Redalyc, PePSIC y PsycNet. Fueron seleccionados 32 artículos organizados en cinco categorías temáticas: conceptos y fundamentos históricos, eficacia de tratamientos, implementación a gran escala, barreras y resistencias, y contexto brasileño y latinoamericano. El análisis reveló que la PPBE evolucionó de una lista restringida de tratamientos empíricamente apoyados hacia modelo integrativo que valora la relación terapéutica y adaptación cultural. Programas como el IAPT en Inglaterra demuestran viabilidad de implementación a gran escala. En Brasil, se observa crecimiento reciente en producción científica, pero persisten lagunas en formación profesional y barreras a la implementación. La PPBE constituye imperativo ético y científico, demandando inversiones en formación, investigación y políticas públicas en el contexto brasileño.

Palabras clave: Práctica Basada en Evidencias. Psicoterapia. Psicología Clínica. Eficacia. Implementación.

1 INTRODUCTION

Evidence-Based Psychological Practice (BE PPBE) has emerged in recent decades as a fundamental paradigm for the consolidation of psychology as an applied science, systematically integrating scientific evidence, clinical expertise, and patient values in therapeutic decision-making [1]. This movement represents not only methodological evolution, but also an ethical imperative that aims to ensure that patients receive interventions with empirically demonstrated efficacy [2].

The origin of PPBE dates back to the evidence-based medicine movement started in the 1990s, but its formalization in psychology occurred in 2006, when the American Psychological Association (APA) established official guidelines through the Presidential Task Force on Evidence-Based Practice [3]. This historical milestone defined the PPBE as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" [1], [4]. Unlike a simple list of validated treatments, the PPBE is a complex decision-making process that requires specific skills from professionals [5].

The historical trajectory of the PPBE reveals significant tensions and conceptual transformations. Initially, the movement focused on the identification of Empirically Supported Treatments (EST's), generating lists of interventions validated by randomized controlled trials [6]. This approach, although important for establishing standards of efficacy, has been criticized for supposedly neglecting common factors of psychotherapy, such as the therapeutic relationship, and for presenting limitations in generalization to real clinical contexts [7], [8]. Subsequent studies have demonstrated that relational elements contribute substantially to therapeutic outcomes, regardless of the specific technique used [9], leading to a more integrative understanding of PPBE.

In the international context, countries such as the United States, the United Kingdom, Canada, and Australia have developed robust public policies and training programs in PPBE [10]. The Improving Access to Psychological Therapies (IAPT) program, implemented in England since 2008, is a paradigmatic example of large-scale implementation, serving more than 560,000 patients annually with recovery rates close to 50% [11]. These advances contrast with the Brazilian and Latin American reality, where the PPBE remains an emerging theme, with limited scientific production and significant gaps in professional training [12], [13].

The Brazilian literature on PPBE has grown in recent years, but still faces considerable challenges. Integrative reviews identified a scarcity of national publications on the subject, concentration on conceptual discussions to the detriment of empirical studies, and professional resistance to the adoption of manualized protocols [12], [14]. At the same time,

there is a growing movement of cross-cultural adaptation of evidence-based interventions and the development of methodological competencies for efficacy evaluation [15], [16].

The barriers to the implementation of the PPBE are multifactorial and include formative, cultural, organizational and epistemological aspects [17]. Studies identify that professionals often perceive treatment manuals as rigid and incompatible with individualization of care [18], revealing conceptual misconceptions about the nature of BEPP. In addition, psychology training in Brazil traditionally favors theoretical approaches to the detriment of competencies in clinical research methodology and critical evaluation of evidence [19].

The present study aims to review the literature on Evidence-Based Psychological Practice, covering its historical trajectory from its origins to the current state, with emphasis on conceptual foundations, evidence of efficacy, implementation strategies, barriers to adoption and particularities of the Brazilian and Latin American context.

2 METHOD

2.1 TYPE OF STUDY

This is a narrative literature review, with a systematic search for scientific articles on Evidence-Based Psychological Practice, covering historical, conceptual, methodological and implementation aspects.

2.2 SEARCH STRATEGY

The search was carried out in seven electronic databases: Scientific Electronic Library Online (SciELO), PubMed/MEDLINE, Google Scholar, ArXiv, Red de Revistas Científicas de América Latina y el Caribe (Redalyc), Portal de Periódicos Eletrônicos de Psicologia (PePSIC) and American Psychological Association PsycNet. The strategy used descriptors in Portuguese, English and Spanish, combined with Boolean operators: "evidence-based practice" OR "evidence-based psychology" OR "empirically supported treatments" OR "evidence-based psychotherapy" AND "psychology" OR "psychotherapy" (and equivalents in English and Spanish).

2.3 INCLUSION AND EXCLUSION CRITERIA

Articles that met the following criteria were included: (a) articles published in peer-reviewed scientific journals; (b) national articles published between 2011 and 2025; (c) international articles published between 1999 and 2025; (d) empirical studies, systematic reviews, meta-analyses, narrative reviews and theoretical articles on PPBE; (e) texts in

Portuguese, English or Spanish; (f) studies that addressed concepts, history, effectiveness, implementation, training, or barriers related to PPBE.

The following were excluded: (a) theses, dissertations and monographs; (b) book chapters; (c) congress abstracts; (d) duplicate articles; (e) studies that did not directly address the PPBE in psychology; (f) articles without access to the full text.

2.4 SELECTION PROCESS

The initial search identified 1,868 records. After removing duplicates, 576 unique articles remained. Screening by title and abstract resulted in the selection of 85 potentially eligible articles. The complete reading of these texts led to the final inclusion of 32 articles that fully met the established criteria.

2.5 DATA ANALYSIS

The selected articles were organized in a spreadsheet containing: authors, year, country, type of study, objectives, methods, main results and conclusions. The thematic analysis allowed the identification of five main categories: (1) concepts and historical foundations of the PPBE; (2) efficacy and effectiveness of psychological treatments; (3) large-scale implementation; (4) barriers and resistance to the adoption of the PPBE; (5) Brazilian and Latin American context.

3 RESULTS

The 32 selected articles were published between 2000 and 2025, with a higher concentration from 2015 onwards. Regarding geographic origin, 18 articles (56.3%) were produced in the United States, 6 articles (18.7%) in Brazil, 3 articles (9.4%) in Spain, 2 articles (6.3%) in England, 2 articles (6.3%) in Argentina and 1 article (3.1%) in Mexico. Regarding the type of study, 12 narrative reviews (37.5%), 5 theoretical/conceptual articles (15.6%), 4 meta-analyses or systematic reviews (12.5%), 4 randomized clinical trials (12.5%), 3 implementation studies (9.4%), 2 integrative reviews (6.3%), 1 survey study (3.1%) and 1 report of educational experience (3.1%) were identified.

Table 1 presents a summary of the main articles included in the review, organized by thematic category.

Table 1
Synthesis of the main articles on Evidence-Based Psychological Practice

Authors/Year	Country	Study Type	Main results
Historical Concepts and Foundations			
Spring (2007)[4]	USA	Narrative review	It defines PPBE as an integrative process (evidence + expertise + preferences); identifies training gaps in methodology
Buscemi & Spring (2015)[1]	USA	Concept article	It presents a transdisciplinary model of PPBE in 5 steps; outlines required skills
Tolin et al. (2015) [6]	USA	Methodological proposal	Recommends revision of EST criteria using systematic reviews and quality assessment
Norcross & Lambert (2018)[9]	USA	Meta-synthesis	Therapeutic relationship contributes substantially to outcomes regardless of technique
Leonardi (2017) [15]	Brazil	Methodological review	Describes RCTs, single case designs, and case studies; recommends greater Brazilian participation
Paulo & Pilatti (2024)[20]	Brazil	Theoretical essay	Advocates expanded role of single-case designs in PPBE
Efficacy and Effectiveness of Treatments			
Soares et al. (2013) [21]	Brazil	Meta-analysis	Group CBT for panic: large effect for symptoms ($g=1.39$), agoraphobia ($g=0.92$) and moderate for depression ($g=0.79$)
Ferreira & Almeida (2020) [22]	Brazil	Cross-cultural adaptation	Translation and adaptation of the TCC manual for depressed elderly; Cultural equivalence achieved
Fonseca-Pedrero et al. (2021) [23]	Spain	Selective review	Updates evidence on empirically supported treatments; Variable empirical support per disorder
Nunes et al. (2020) [24]	Brazil	Non-systematic review	International literature demonstrates the effectiveness of CBT in public systems; National Literature Limited
Diniz de Souza & Lisboa (2023) [25]	Brazil	Scoping Review	Maps third-generation therapies in Brazil; need for empirical studies
Large-Scale Implementation			
Clark (2018) [11]	England	Programmatic review	IAPT treats >560,000 patients/year; ~50% recover and ~66% obtain clinical benefits
Damschroder & Hagedorn (2011)[26]	USA	Framework	Presents CFIR to identify factors influencing implementation
Puspitasari et al. (2017) [27]	USA	Randomized controlled trial	Guided online training produced greater increases in skills than self-pacing
Forand et al. (2025) [28]	USA	Implementation study	Evaluates Effects of Measurement-Based Care on Symptoms and Clinical Practices
Barriers and Resistances			
Cook et al. (2017) [7]	USA	Narrative review	Discusses myths that discourage the use of PPBE; identifies conceptual barriers
Gaudiano & Miller (2013)[8]	USA	Critical review	Identifies decline in the use of psychotherapy; need for large-scale adaptations
Addis & Krasnow (2000)[18]	USA	Survey study	45% of psychologists report that manuals overvalue techniques; 47% say they ignore individualities
Gálvez-Lara et al. (2019) [30]	Spain	Survey study	Variability in the knowledge and use of evidence-based treatments
Brazilian and Latin American Context			
Ferreira de Azevedo (2022) [12]	Brazil	Integrative review	Found only 5 relevant articles on PPBE in Latin America

Melnik et al. (2019) [19]	Brazil	Experience report	Describes the first course on PPBE in Brazil (USP); recommends curricular inclusion
Distel Sanchez et al. (2018) [31]	Argentina	Theoretical article	Recommends the incorporation of PPBE skills in vocational training
Jiménez-Pérez et al. (2022) [32]	Mexico	Knowledge study	Identifies training needs and skill gaps for implementation
Almeida & Sartes (2021)[33]	Brazil	Scoping Review	Few publications on CBT in CAPS ad; Obstacles persist in Brazilian services

Note: CBT = Cognitive-Behavioral Therapy; RCT = Randomized Clinical Trial; EST = Empirically Supported Treatments; IAPT = Improving Access to Psychological Therapies; CFIR = Consolidated Framework for Implementation Research; CAPS ad = Psychosocial Care Center for Alcohol and Drugs.
Source: Authors.

3.1 CONCEPTS AND HISTORICAL FOUNDATIONS OF THE PPBE

Historical analysis reveals that the PPBE has evolved significantly since its origins. Spring (2007) [4] established a fundamental distinction between PPBE and empirically supported lists of treatments, defining it as a decision-making process that integrates three components: best available evidence, clinical expertise, and patient characteristics/preferences. This tripartite model has become an international reference and was officially adopted by the APA in 2006 [1].

Buscemi and Spring (2015) [1] expanded this conceptualization by proposing a transdisciplinary model of Evidence-Based Behavioral Practice in five steps: (1) formulating an answerable clinical question; (2) systematically seek the best evidence; (3) critically evaluate the evidence; (4) integrate evidence with clinical expertise and patient values; (5) evaluate results and adjust intervention. This model emphasizes specific competencies needed by professionals.

The evolution of the criteria for identifying empirically supported treatments is a central aspect of the history of the PPBE. Tolin et al. (2015) [6] proposed a revision of the original EST criteria, recommending the incorporation of systematic reviews, rigorous evaluation of methodological quality, and consideration of contextual factors. This proposal reflects the maturation of the field towards more sophisticated standards of evidence synthesis.

A fundamental parallel development was the recognition of the importance of the therapeutic relationship. Norcross and Lambert (2018) [9] synthesized evidence from three APA Task Forces on relational elements in psychotherapy, identifying nine demonstrably effective and seven probably effective elements. This meta-synthesis demonstrated that the therapeutic relationship contributes substantially to results, regardless of the specific technique used.

In the Brazilian context, Leonardi (2017) [15] offered an important methodological contribution by describing three appropriate methods to investigate the efficacy of psychotherapies: randomized clinical trials, single-case designs, and case studies. Paulo and Pilatti (2024) [20] complement by defending the expanded role of single-case designs in

PPBE, especially for the study of therapeutic change processes.

3.2 EFFICACY AND EFFECTIVENESS OF PSYCHOLOGICAL TREATMENTS

The evidence for the effectiveness of evidence-based psychological interventions is robust and covers a variety of mental disorders. Soares et al. (2013) [21] conducted a meta-analysis on the effectiveness of group Cognitive-Behavioral Therapy (CBT) for panic disorder. The results showed a large effect for panic and anxiety symptoms ($g=1.39$), a large effect for agoraphobia ($g=0.92$) and a moderate effect for depressive symptoms ($g=0.79$), confirming group CBT as an effective and viable alternative.

Cross-cultural adaptation of evidence-based interventions is a major challenge. Ferreira and Almeida (2020) [22] described the process of translation and adaptation of the American manual of CBT for depression in the elderly to the Brazilian context, achieving semantic, conceptual and cultural equivalence, although they emphasize the need for subsequent studies of fidelity and efficacy.

Fonseca-Pedrero et al. (2021) [23] conducted a selective review of empirically supported psychological treatments for adults in the Spanish context, identifying empirical support that varies according to the disorder, with more robust evidence for CBT in anxiety disorders and depression.

In the Brazilian context, Nunes et al. (2020) [24] analyzed how CBT can contribute to the efficient use of public resources in the SUS. The review identified that the international literature demonstrates the efficacy of CBT in public health systems, but the national literature remains limited. Diniz de Souza and Lisboa (2023) [25] mapped the dissemination of third-generation therapies in Brazil, identifying growth in production on ACT, DBT, and Mindfulness, but pointing out the need for empirical efficacy studies.

3.3 LARGE-SCALE IMPLEMENTATION AND DISSEMINATION FRAMEWORKS

The Improving Access to Psychological Therapies (IAPT) program, implemented in England since 2008, is a paradigmatic example of successful large-scale implementation of HLPP. Clark (2018) [11] describes that the IAPT has trained more than 10,500 therapists, serves more than 560,000 patients annually, and collects outcome data in 98.5% of cases. Approximately 50% of patients achieve clinical recovery and about 66% achieve clinically significant benefit. The program is based on manualized protocols, intensive training, continuous supervision, and systematic monitoring of results.

Damschroder and Hagedorn (2011) [26] presented the Consolidated Framework for Implementation Research (CFIR), a comprehensive framework that identifies factors that

influence the implementation of evidence-based practices. The CFIR organizes constructs into five domains: characteristics of the intervention, external setting, internal setting, characteristics of individuals, and implementation process.

Puspitasari et al. (2017) [27] conducted randomized controlled trial comparing instructor-led online training versus self-paced in Behavioral Activation. Guided training produced significantly greater increases in objective skills, suggesting that active online training constitutes a viable dissemination strategy.

Recent studies explore digital technologies for scalability. Forand et al. (2025) [28] evaluated effects of organizational implementation of Measurement-Based Care in technology-supported psychotherapeutic practice by examining changes in clinical symptoms and behaviors.

3.4 BARRIERS AND RESISTANCE TO THE ADOPTION OF THE PPBE

Despite robust evidence, the adoption of PPBE faces significant barriers. Cook et al. (2017) [7] identified myths that discourage the use of evidence-based psychotherapy, including perceptions that manuals are rigid and incompatible with individualization of care. The authors argue that these misconceptions reflect misunderstandings about the nature of the PPBE.

Gaudiano and Miller (2013) [8] analyzed future trends and challenges, identifying worrying declines in the use of psychotherapy in favor of pharmacological treatments, tensions between research and clinical practice, and the need for approaches that promote sustainable implementation.

Addis and Krasnow (2000) [18] investigated attitudes of 2,970 licensed psychologists in the United States about treatment manuals. The results revealed that 45% reported that manuals overvalue techniques, 47% stated that they ignore individualities, and 33% perceived that the use of manuals decreases the authenticity of the therapeutic process.

Gálvez-Lara et al. (2019) [30] investigated knowledge and use of evidence-based treatments among 242 psychologists in Spain, demonstrating considerable variability influenced by type of training, years of experience, and theoretical orientation.

3.5 BRAZILIAN AND LATIN AMERICAN CONTEXT

Scientific production on PPBE in Brazil and Latin America remains limited, although growing. Ferreira de Azevedo (2022) [12] conducted an integrative review of the Latin American literature on BE in psychotherapy, identifying only 5 relevant articles. Recurring themes included history of BEPP, conflicts between common and specific factors, and

criticism. The author concludes that there is an urgent need for more robust systematic reviews and local research.

Melnik et al. (2019) [19] reported a pioneering experience of offering the first course on PPBE in Brazil, taught at USP. The course addressed sources of evidence, experimental designs, systematic reviews and clinical decision-making. The authors recommend the inclusion of disciplines on PPBE in undergraduate and graduate curricula.

In the Latin American context, Distel Sanchez et al. (2018) [31] discussed models for training psychologists in Argentina, recommending the incorporation of competencies in PPBE. Jiménez-Pérez et al. (2022) [32] assessed knowledge and skills in PPBE among psychotherapists in Mexico, identifying formative needs.

Almeida and Sartes (2021) [33] conducted a scoping review on the application of CBT in CAPS ad in Brazil, finding only 5 publications. The results indicated that, although CBT has advantageous characteristics for public health, obstacles persist to its adoption in Brazilian services, including insufficient training and limited resources.

4 DISCUSSION

The analysis of the literature on PPBE reveals a trajectory of significant conceptual and methodological maturation in the last two decades. The evolution from a restricted list of empirically supported treatments to an integrative model that values scientific evidence, clinical expertise, therapeutic relationship and patient preferences represents a fundamental advance [1], [4], [9]. This integrative model responds to initial criticisms about the supposed rigidity of the PPBE and recognizes the complexity of the therapeutic process.

The evidence for the effectiveness of evidence-based psychological interventions is robust, with emphasis on CBT [21], [23], [24]. Meta-analyses demonstrate large to moderate effect sizes for various conditions, comparable to or superior to pharmacological interventions [21]. However, the generalization of these findings to real clinical contexts and diverse populations remains an important challenge, requiring studies of effectiveness and cross-cultural adaptation [22], [25].

The large-scale implementation of the PPBE, exemplified by the IAPT program, demonstrates the feasibility of evidence-based national mental health systems [11]. The success of IAPT is based on key components: intensive and standardized training, continuous supervision, manualized protocols, systematic monitoring of results, and sustained government investment. These elements constitute a reference for the development of public policies in other countries.

Implementation frameworks, such as CFIR [26], offer valuable conceptual tools to

understand and overcome barriers to PPBE adoption. The identification of enabling factors and obstacles at multiple levels allows for contextualized strategic implementation planning. The differentiation between core and adaptive components of interventions is particularly relevant for cultural adaptation.

The barriers to the adoption of the PPBE are multifactorial [7], [8], [18], [30]. Conceptual misconceptions about the nature of PPBE, perceptions of incompatibility with individualization of care, and professional resistance constitute significant obstacles that require specific educational interventions. PPBE training should emphasize not only knowledge about evidence-based treatments, but also competencies in research literacy, critical thinking, and integrative clinical decision-making [1], [5].

The Brazilian and Latin American context presents specific challenges. Regional scientific production remains limited [12], [14], with a scarcity of empirical efficacy studies, concentration on conceptual discussions, and gaps in professional training [19]. Psychology training in Brazil traditionally favors theoretical approaches to the detriment of methodological skills [15], [19].

Recent initiatives, such as the offer of the first course on PPBE at USP [19], cross-cultural adaptation of manuals [22] and growth of publications [25], indicate a promising movement. However, these advances remain isolated and insufficient for systemic transformation. The effective implementation of the PPBE in Brazil demands: mandatory inclusion of disciplines on PPBE in curricula, continuing education programs, investment in effective research with Brazilian populations, systematic cross-cultural adaptation, evidence-based public policies, and results monitoring systems.

The comparison between international and Brazilian contexts reveals a significant gap in scientific production, research infrastructure, funding, and public policies [11], [12], [24]. Countries such as the United States, the United Kingdom, and Canada invest substantially in clinical research, professional training, and the implementation of evidence-based systems, resulting in better outcomes and more efficient use of public resources.

The limitations of this study include: narrative nature of the review, possible publication bias, heterogeneity of the included studies, and scarcity of Brazilian studies. Future research should prioritize: randomized clinical trials with Brazilian populations, effectiveness studies in the SUS, systematic cross-cultural adaptation, investigations on barriers specific to the Brazilian context, cost-effectiveness studies, evaluation of training programs, and development of instruments to assess competencies in PPBE.

5 FINAL CONSIDERATIONS

Evidence-Based Psychological Practice is an ethical and scientific imperative that aims to ensure that patients receive interventions with empirically demonstrated efficacy, integrating scientific evidence, clinical expertise, and patient preferences. In the Brazilian context, there has been a recent growth in scientific production, but substantial gaps persist in professional training, empirical research, and public policies. The consolidation of the PPBE in Brazil requires systemic investments in training, research and implementation, constituting a priority agenda for the advancement of psychology as an applied science committed to the well-being of the population.

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AUTISM SPECTRUM DISORDER: BEHAVIORAL AND GENETIC ASPECTS

TRANSTORNO DO ESPECTRO DO AUTISMO: ASPECTOS COMPORTAMENTAIS E GENÉTICOS

TRASTORNO DEL ESPECTRO AUTISTA: ASPECTOS CONDUCTUALES Y GENÉTICOS



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ABSTRACT

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by persistent deficits in communication and social interaction, associated with restricted and repetitive patterns of behavior, interests, or activities. This study aims to present a review of the main conceptual, clinical, and genetic aspects related to autism, highlighting scientific advances that have contributed to a broader understanding of the disorder. Over time, the conception of autism has undergone important changes, and it is currently understood as a spectrum that involves different levels of manifestation and need for support. Clinically, ASD manifests itself from early childhood and may include difficulties in verbal and nonverbal communication, impairments in social interaction, stereotyped behaviors, restricted interests, and sensory alterations. Early identification of the disorder is considered fundamental, as it allows for more effective therapeutic interventions and favors better outcomes in the cognitive, social, and communicative development of the individual. In the field of genetics, recent research indicates that ASD has a strong hereditary component, involving multiple genes associated with the development and functioning of the nervous system. Rare and common genetic variants, spontaneous mutations, and epigenetic alterations contribute to the clinical heterogeneity observed among individuals on the spectrum. Furthermore,

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environmental factors can interact with genetic predisposition, influencing the risk of developing the disorder. Therefore, ASD should be understood as a multifactorial and complex condition, whose continuous investigation is essential to expand knowledge about its biological mechanisms, improve diagnostic strategies, and develop more effective therapeutic interventions.

Keywords: Autism. Neurological Development. Genes. Epigenetics.

RESUMO

O Transtorno do Espectro Autista (TEA) é um transtorno do neurodesenvolvimento caracterizado por déficits persistentes na comunicação e na interação social, associados a padrões restritos e repetitivos de comportamento, interesses ou atividades. O presente estudo tem como objetivo apresentar uma revisão sobre os principais aspectos conceituais, clínicos e genéticos relacionados ao autismo, destacando avanços científicos que contribuíram para ampliar a compreensão do transtorno. Ao longo do tempo, a concepção do autismo passou por mudanças importantes, sendo atualmente compreendido como um espectro que envolve diferentes níveis de manifestação e necessidade de suporte. Clinicamente, o TEA manifesta-se desde a primeira infância e pode incluir dificuldades na comunicação verbal e não verbal, prejuízos na interação social, comportamentos estereotipados, interesses restritos e alterações sensoriais. A identificação precoce do transtorno é considerada fundamental, pois possibilita intervenções terapêuticas mais eficazes e favorece melhores resultados no desenvolvimento cognitivo, social e comunicativo do indivíduo. No campo da genética, pesquisas recentes indicam que o TEA possui forte componente hereditário, envolvendo múltiplos genes associados ao desenvolvimento e funcionamento do sistema nervoso. Variantes genéticas raras e comuns, mutações espontâneas e alterações epigenéticas contribuem para a heterogeneidade clínica observada entre os indivíduos no espectro. Além disso, fatores ambientais podem interagir com a predisposição genética, influenciando o risco de desenvolvimento do transtorno. Dessa forma, o TEA deve ser compreendido como uma condição multifatorial e complexa, cuja investigação contínua é essencial para ampliar o conhecimento sobre seus mecanismos biológicos, aprimorar estratégias diagnósticas e desenvolver intervenções terapêuticas mais eficazes.

Palavras-chave: Autismo. Desenvolvimento Neurológico. Genes Autismo. Epigenética Autismo.

RESUMEN

El trastorno del espectro autista (TEA) es un trastorno del neurodesarrollo caracterizado por déficits persistentes en la comunicación y la interacción social, asociados a patrones de comportamiento, intereses o actividades restringidos y repetitivos. Este estudio tiene como objetivo presentar una revisión de los principales aspectos conceptuales, clínicos y genéticos relacionados con el autismo, destacando los avances científicos que han contribuido a una comprensión más amplia del trastorno. Con el tiempo, la concepción del autismo ha experimentado cambios importantes y actualmente se entiende como un espectro que implica diferentes niveles de manifestación y necesidad de apoyo. Clínicamente, el TEA se manifiesta desde la primera infancia y puede incluir dificultades en la comunicación verbal y no verbal, deficiencias en la interacción social, comportamientos estereotipados, intereses restringidos y alteraciones sensoriales. La identificación temprana del trastorno se considera fundamental, ya que permite intervenciones terapéuticas más efectivas y favorece mejores resultados en el desarrollo cognitivo, social y comunicativo del individuo. En el campo de la

genética, investigaciones recientes indican que el TEA tiene un fuerte componente hereditario, que involucra múltiples genes asociados con el desarrollo y el funcionamiento del sistema nervioso. Las variantes genéticas raras y comunes, las mutaciones espontáneas y las alteraciones epigenéticas contribuyen a la heterogeneidad clínica observada entre las personas con trastorno del espectro autista (TEA). Además, los factores ambientales pueden interactuar con la predisposición genética, influyendo en el riesgo de desarrollar el trastorno. Por lo tanto, el TEA debe entenderse como una condición multifactorial y compleja, cuya investigación continua es esencial para ampliar el conocimiento sobre sus mecanismos biológicos, mejorar las estrategias diagnósticas y desarrollar intervenciones terapéuticas más eficaces.

Palabras clave: Autismo. Desarrollo Neurológico. Genes. Epigenética.

1 INTRODUCTION

Autism is a term originating from the Greek *autos* and means "turned to oneself". The year 1908 represents a historical milestone in autism when it was first used by psychiatrist Eugen Bleuler (1857-1939) to describe the escape from reality into an inner world (inner withdrawal), a common behavior in schizophrenic patients (Cunha, 2020). However, autism, as it is known today, can be considered a "technically recent phenomenon" that permeates discussions of its causes, treatment and public policies, and whose diagnosis is significant both for autistic people and for their families (Marfinati; Abrão, 2014; Fernandes; Costa e Silva, 2023).

The history and conceptualization of autism go back to its description and diagnostic categorization in which behaviors and characteristics configure a specific picture. Its psychopathological diagnosis is based on the formulations of Leo Kanner (2012, p. 168), a psychiatrist considered the father of autism.

Kanner observed, in the manifestations of early childhood children, a strong desire for solitude as a form of self-regulation (intense sensory and emotional stimuli, affectivity and stress control) and resistance to change, preferring predictable routines and actions as a way to reduce anxiety and stress (Bialer; Voltolini, 2022). Kanner conceived autism as a disorder distinct from schizophrenia, in which, among other aspects of child development, communicative difficulty stands out.

From 1908 onwards, there were several advances in the delimitation of the characteristics and diagnosis of autism (Marfinati; Abração, 2014; Brazil, 2015a, b; Dias, 2015; Brazil, 2020; Fernandes; Costa e Silva, 2023).

In 1943, the Austrian-American psychiatrist Leo Kanner made the first diagnoses of autism, disassociating it from schizophrenia and treating it as a behavioral syndrome. In that

year, he published his first discoveries about autism in his study entitled "*Autistic disturbances of affective contact*", outlining the main characteristic of autism: the child's inability to communicate and relate to other people, from the first years of life (Marfinati; Abrão, 2014).

In 1944, Hans Asperger, a psychiatrist and researcher from Vienna, exposed clinical conditions similar to autism, describing four children who presented the central issue – disorder in the relationship with the environment: poverty of gestural and facial expressions, restlessness; stereotyped, aimless, rhythmic movements; artificial speech; fields of interest different from those presented by other children of the same age, abstraction and inventiveness, unconscious imitation of adult behaviors; field of emotions without affective poverty, but with qualitative alteration and disharmony (hypersensitivity of instincts, "extreme egocentrism" and lack of sense of humor). Asperger pointed out the higher prevalence of autism in boys, who had little empathy, restricted interests and a peculiar way of talking.

In 1952, the American Psychiatric Association publishes the first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-1), in which autism appears referenced, establishing specific standards, becoming a world reference for researchers and clinicians in the segment. The Manual provided nomenclatures and standard criteria for whether the diagnosis of mental disorders was established, and the various symptoms of autism were classified as a subgroup of childhood schizophrenia.

It was in 1978, however, that British psychiatrist Michael Rutter classified autism as a cognitive development disorder. He proposed that it was: a delay, social deviations and communication problems and not just an intellectual disability; unusual behaviors presented as stereotyped movements and mannerisms; it began even before 30 months of age. From his studies, autism came to be recognized as a specific condition, classified as an Pervasive Developmental Disorder (PDD), in which multiple areas of brain functioning are affected by autism and related conditions.

From the 1980s onwards, the concept and psychoanalytic conceptions of autism were defined in psychiatric manuals, becoming part of the Pervasive Developmental Disorders (PDD) – ICD-10 (Brasil, 2015a). The subsidiary criteria for the diagnosis of autism involved changes over time, being described in nosological categorization manuals, such as the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) and the *International Classification of Diseases and Related Health Problems* (ICD) (Fernandes; Tomazelli; Gorianelli, 2020).

In Brazil, in 2012, Law No. 12,764 (Berenice Piana Law) was sanctioned, which institutes the National Policy for the Protection of the Rights of Persons with Autism Spectrum Disorder. This law represents a significant legal framework that sought to guarantee rights to

people with ASD, such as access to early diagnosis, treatment, therapies and medication offered by the Unified Health System (SUS), education and social protection, work and services aimed at equal opportunities (Sousa, 2021).

Launched in 2013, the *DSM-5* now encompasses the various subcategories of autism in a single diagnosis: Autism Spectrum Disorder (ASD), that is, a single spectrum with different levels of severity and deficits in two central domains: a) deficiencies in social communication, social interaction, and communication; b) repetitive, stereotyped, restricted, and behaviors of interests and activities (Paoli; Machado, 2022). In this version of the *DSM-5*, the denomination used is "autism spectrum disorders", located in the group of "neurodevelopmental disorders", which encompasses autistic disorder (autism), Asperger's disorder, childhood disintegrative disorder, Rett's disorder and pervasive developmental disorder not otherwise specified by the *DSM-IV* (APA, 2014; Brazil, 2015a).

In 2015, Law 13.146 (Brazilian Law for the Inclusion of Persons with Disabilities) was enacted, which created the Statute of Persons with Disabilities, increasing the protection of people with ASD. The Law defines a person with a disability as "one who has a long-term impairment of a physical, mental, intellectual or sensory nature" (Brasil, 2015b, art. 2). The Statute of Persons with Disabilities (Law 13,146) and the National Policy for the Protection of the Rights of Persons with Autism Spectrum Disorder (Law No. 12,764/2012) are considered important symbols in the defense of equal rights for the disabled, in the fight against discrimination and in the regulation of accessibility and priority care (Setúbal; Fayan, 2016).

In 2020, Law 13.977 (or Romeo Mion Law) came into force, which created the Identification Card for Persons with Autism Spectrum Disorder (Ciptea), with free issuance by states and municipalities (Brasil, 2020). The card is a substitute for the medical certificate and has the function of facilitating access to rights provided for in Law No. 12,764/2012, known as the Berenice Piana Law (Brazil, 2012).

In 2022, the version of the International Statistical Classification of Diseases and Related Health Problems, the ICD-11, follows what had been proposed in the *DSM-5* and adopts the nomenclature Autism Spectrum Disorder. The new version encompasses all previous diagnoses classified as Pervasive Developmental Disorder (PDD) to allow an individualized and more accurate assessment of autism according to the need for support, in addition to making the diagnosis more inclusive and aligned with individual needs (Freitas *et al.*, 2023).

From the point of view of care, autistic people did not have support outside the health field and were cared for by philanthropic (such as Apae and the Pestalozzi Society) and educational entities, or by non-governmental organizations that offered social assistance

services, for example, family associations. Few had access to Mental Health services, in psychiatric or university hospitals, with multiprofessional treatment, but without articulation with a territorial network of services, as recommended by the National Mental Health Policy. Other services to autistic people were provided in a traditional outpatient setting, accompanied by a psychiatrist or neurologist, with drug treatment. Only recently, autism has entered the official political agenda of health and, with the publication of Ordinance No. 336/2002 (Brasil, 2002), the Center for Psychosocial Care for Children and Adolescents (CAPSI) has been consolidated "as a privileged equipment for psychosocial care for children with autism within the scope of the SUS, although it is not exclusively aimed at this clientele" (Brasil 2015b, p. 29).

According to Brazilian law, "the person with autism spectrum disorder is considered a person with a disability" (Brasil, 2012, art. 1, § 2) and has specific rights, such as priority care, free access to health, education and social assistance, and Law No. 13,146/2015 (Inclusion Law) encompasses people with autism, expanding their rights (Brasil, 2015b).

The Diagnostic and Statistical Manual of Mental Disorders: DSM-5 describes autism, also known as Autism Spectrum Disorder (ASD),¹² as a general condition of people with behavior characterized by low social interaction, deficit in social communicative ability (verbal and non-verbal), repetitive, restricted and stereotyped behaviors, sensory and motor issues, conduct control, little interest in performing the proposed activities (APA, 2014), and may have peculiar interests, such as music, history, politics, philosophy, among others (Paoli; Machado, 2022).

ASD is part of the group of neurodevelopmental disorders, with symptoms and level of impairment significantly varying from person to person. According to the DSM-5 Diagnostic and Statistical Manual of Mental Disorders, neurodevelopmental disorders group conditions that begin in the developmental period and manifest early, even before the child enters school. The disorder is characterized

[...] by developmental deficits that cause impairments in personal, social, academic or professional functioning. Developmental deficits range from very specific limitations in learning or in the control of executive functions to global impairments in social skills or intelligence. It is frequent [...] the occurrence of more than one neurodevelopmental

¹² The 11th Revision of the International Classification of Diseases (ICD-11) was published in 2022. The ICD-11 adopted the nomenclature Autism Spectrum Disorder (ASD) to encompass all diagnoses previously classified as Pervasive Developmental Disorder (PDD), under code 6A02, including: childhood autism, Asperger's syndrome, and childhood disintegrative disorder. By unifying the diagnosis, the ICD-11 enables subdivisions of ASD and assists in a more accurate diagnosis and the development of individualized treatment plans. Rett syndrome, however, has its own code (LD90.4) in the ICD-11, and is no longer considered a member of the autism spectrum (Brasil, 2024). The Note establishes the implementation of ICD-11 in Brazil as of January 2027, although the World Health Organization (WHO) has adopted it as of January 2022.

disorder; for example, individuals with autism spectrum disorder often have intellectual disability (intellectual developmental disorder), and many children with attention-deficit/hyperactivity disorder (ADHD) also have a specific learning disorder. In the case of some disorders, the clinical presentation includes symptoms of both excess and deficits and delays in reaching the expected milestones. (APA, 2014, p. 31)

Autism spectrum disorder (ASD) is identified by two areas: a) persistent deficits in social communication [adaptive functioning] and social interaction, and b) presence of restricted and repetitive patterns of behavior, interests, or activities (Fernandes; Costa e Silva, 2023). The main symptoms can appear in early childhood, however, it is emphasized that the diagnosis is complex and variable in intensity.

2 CLINICAL BEHAVIORAL CHARACTERISTICS

ASD originates in the first years of life, although it does not manifest uniformly at this stage. Some children have apparent and not very suggestive symptoms at birth. Most autism symptoms are identified between 12 and 24 months of age, but in general, they are usually diagnosed at 4 or 5 years of age (Cardoso *et al.*, 2019).

Autism Spectrum Disorder, or simply autism, is a neurological disorder that affects the individual's social environment (lack of interaction, including social isolation), their communication, and repetitive behavior patterns. The earlier it is diagnosed in the child, the better their development will be in the areas of communication, learning, and behavior reduction (Araújo, 2022). The stage of functional impairment varies according to the severity of the autistic condition, the level of development and chronological age, the characteristics of the individual and his environment that are evident in the developmental period, because the signs can be masked through interventions and compensations (APA, 2014).

Commonly, autistic children manifest a high degree of loneliness and other traits: extreme disinterest, does not respond to external stimuli, has "impaired communication, mutism, echolalic language, obsessive insistence on sameness, anxiety in the face of new situations, repetitive rituals, fascination with objects and disinterest in people, distressing reaction" to the presence of others (Barroso, 2019, p. 1234). Without responding to external stimuli, autistic children practically do not develop social interaction, live in their own universe, although they maintain an intelligent relationship with objects and memory above the ordinary and need predictability translated into routine, sameness and monotony (Maranhão; Pires, 2017; Tamanaha *et al.*, 2022).

Other components for ASD include: impaired reciprocity, nonverbal communication, motor stereotypy, repetitive behaviors and interests (intense and unusual), sensory sensitivities, speech (language) and cognition alterations, frequent atypical sensory responses (Barros; Source, 2016; Meneses and Silva, 2020; Arvigo; Schwartzman, 2021; Silva *et al.*, 2025). ASD may also be associated with other psychiatric disorders, such as attention deficit hyperactivity disorder, depression, and anxiety, and medical conditions, such as epilepsy and genetic disorders (Cardoso *et al.*, 2019).

Children with ASD have a unique triad, found in "difficulty and qualitative impairments of verbal and non-verbal communication, in social interactivity and in the restriction of their cycle of activities and interests", and the symptomatology may bring together "stereotyped movements and mannerisms", in addition to "variable intelligence pattern and extremely labile temperament" (Pinto *et al.*, 2016, p. 2). The symptomatology also includes results bordering on stress such as "difficulty concentrating and paying attention, nervousness,

anxiety, depressed mood, sadness, intense fear, sudden changes in mood or feeling" for no apparent reason, obsessions and cognitive inflexibility, withdrawal from oneself (isolation), relationship difficulties, nightmares, among others (Almeida *et al.*, 2021, p. 92). What is certain is that the early identification of risk signs and screening for the disorder in early childhood is essential, since the sooner it is identified and treatment is initiated, the better the results for cognitive development and language (Almeida *et al.*, 2021, p. 91).

Childhood autism is a serious developmental disorder that encompasses socio-communicative impairments (Mercado, 2022) such as language regression (Backes; Zanon; Bosa, 2017). It also has the consequence of compromising the acquisition of some of the skills indispensable for human life, with impairments in social interactions, deficiencies in verbal and non-verbal communication, and the limitation of activities and interests. This whole picture directly interferes in social relationships (including family relationships), in the school environment, in the relationship between student and teacher, and even between special students and those considered normal (Bianchi; Abrão, 2023, p. 5261), although he may have special abilities, clumsy motor movements, lack of empathy, extreme sincerity, and few friends (Paoli, Machado, 2022).

Adolescence is a transition between childhood and adulthood and presents itself as a period with unique challenges for all young people and, in particular, for young people with ASD. In adolescence, autistic people may suffer a behavioral decline, with a decrease in language skills and sociability, have higher levels of anxiety and depression related to the degree of self-awareness and their inability to relate socially when trying to establish friendships, talk and interact with other adolescents and even adults. The lack of ability to interact makes it easier for autistic people to become victims of psychological and physical abuse – a reason for frustrations that make them more introspective (Serbai; Priotto, 2021).

Although the symptoms of autism tend to improve with advancing age, in adolescence there are still marked difficulties in social relationships and communication, also due to the expansion of interest and greater demands inherent to this stage of life, in relation to autonomy, psycho-affective development and educational and social processes. Despite this, adolescents with ASD, when adequately stimulated, tend to achieve a higher degree of self-sufficiency in adulthood in the long term (Serbai; Priotto, 2021).

Adolescents with ASD are confronted with the presence of numerous issues (search for autonomy, insertion in social groups, construction of love partnerships) that are reduced throughout life. It is worth remembering that characteristics of the individual and the environment around them will show the variation of functional impairment, since the

manifestations of the disorder essentially depend on the severity of the autistic condition (Cardoso *et al.*, 2019).

The persistence of deficits in adolescence (in communication, social interaction, etc.) marks reciprocal social movements and inclusion in adolescent groups. However, the search for autonomy (personal care, school demands) and independence (displacement from one place to another, personal care) can generate distancing from parental figures, although it is an important foundation in the construction of identity. These factors, added to the individualized search in the sphere of love, intensify the obstacles in the sharing of interests, emotions or affections: the autistic adolescent must break these obstacles in the affective approximation made difficult by the lack of verbal and non-verbal communication, for the initiation, maintenance and understanding of relationships, as well as behavior adjusted to social contexts (groups of friends, standard social coexistence, *e.g.*) and control of reactivity to sensory stimuli in the environment (Saad; Bastos; Souza, 2020).

Adolescents must have adequate family (emotional and material) and psychological support in order to be able to deal with situations in which social demands exceed their limited natural capacities: in the construction of social and professional functioning and activities performed in the family context; in the perception of affectivity (relationships of affection) among family members; in the reduction of stress levels and excessive overload in care (Freitas *et al.*, 2020).

In adults, Autism Spectrum Disorder (ASD) is often neglected, given that, predominantly associated with childhood, its identification is difficult because its typical signs are masked over the years and its diagnosis in adults usually occurs after some episode of dysregulation in the professional or social sphere (Duarte; Ribeiro; Nazaré, 2024).

In fact, the behavioral changes manifested in the autistic individual can be present at any age. Adults with ASD present: absence of intellectual deficit and have more fluent language and adequate levels of intelligence, although they may commonly present difficulties in social interaction and difficulties in acquiring new adaptive skills. This can occur through mechanisms of copying neurotypical behaviors that mask autistic symptoms and camouflage social interactions, by imitating gestures, sounds, and facial expressions in certain situations, despite the fact that the adult autistic person has social skills of a limited, restricted, and rehearsed nature, and expresses himself in monologues (Ronzani *et al.*, 2023).

As autism is a neurodevelopmental disorder, it is characterized by difficulty in communication, social interaction and restrictive or repetitive behaviors, with varying degrees of severity and manifestation, being a permanent condition that includes clinical

manifestations that require a holistic approach; to this end, adaptive functioning and social demands are taken into account, and the condition of adult autism tends to be less evident than in children (Alves, 2024). However, adults with ASD may face ongoing challenges, with persistent symptoms (such as aggression and social difficulties), creating significant impacts on the social and health services available to this population. In adults, late diagnosis tends to compromise emotional and social development, cause tension, isolation and stress, limit opportunities for insertion in the labor market and in society (Duarte; Ribeiro; Nazaré, 2024). It can generate a greater degree of anxiety due to the perception of differences in relation to others, however, it can also constitute an opportunity for self-acceptance and understanding to improve quality of life and reduce anxious behaviors or behaviors considered inappropriate (Carvalho; Neres; Nascimento, 2024).

Fabretti *et al.* (2024) reinforce the presence, in adults, of "challenges in social interactions, atypical communication, repetitive behaviors, and sensory sensitivities", that is, they highlight the clinical repercussions of the "recurrent presence of comorbidities, especially anxiety and depression, in addition to challenges in terms of physical and academic health". Anxiety and depression appear as protagonists that aggravate the clinical panorama of autistic adults who have to face frequent "challenges in dealing with social and environmental demands", difficulties in social engagement and interpersonal interactions that usually contribute to the development of mental disorders.

In addition, adult autism has to overcome physical health challenges, including the presence of simultaneous medical conditions and medical comorbidities, such as gastrointestinal disorders and autoimmune diseases, which increase the complexity of management (Brasil, 2015a). Difficulties in socialization should also be highlighted, resulting in isolation and reduced opportunities in the construction of meaningful interpersonal relationships; the obstacles (cognitive inflexibility, sensory hypersensitivity, adaptive difficulties to change) that compromise performance and limit growth opportunities (Paiva *et al.*, 2025).

3 DIAGNOSIS

Early diagnosis of ASD, especially between 2 and 6 years of age, is extremely important to: optimize the development of the infant and his quality of life, enable a positive change in the condition and stimulate the child (improve social and communicative skills, for example); increase the results of therapies and treatments performed by the multidisciplinary team; increase the chances of success in the appropriate treatment of other diseases (current or supervening) through interventions personalized and timely supports in the early stages of

the disease, before it progresses; prevent possible more significant harm to the child in the future and expand awareness among parents and caregivers. In addition, it reduces the cost of care and medication and unwanted and challenging behaviors (Doubrawa; Menezes, 2023; Ramos *et al.*, 2024; Mota *et al.*, 2025).

Early diagnosis in children can identify autistic characteristics such as "intense relationship with inanimate objects; intelligent physiognomy; cognitive potential; changes in communication; possible special abilities, such as memory; peculiar interests; obstinacy for rituals and unaltering the environment" (Paoli; Machado, 2022, p. 548).

Among the benefits provided by the early diagnosis of autism, Girianelli *et al.* (2023) mention: reduction of costs associated with late interventions, better treatment effectiveness and overcoming challenges, deeper understanding of the individual needs of the autistic person, significant additional advantages for family members, caregivers and the affected individuals themselves (improvement in social and academic/school adaptation), expansion of social, communicative (verbal and non-verbal) and motor skills, improvement of quality of life, establishment of support and favorable support throughout life to face specific challenges (associated with cognitive, social, sensory, and behavioral development), possibility of implementing rapid and efficient therapeutic strategies, positive influence on neural plasticity throughout development.

Leite *et al.* (2024) and Mota *et al.* (2025) corroborate these benefits and adduce others: it favors and enhances the possibilities of intervention in the early stages of child development, the acquisition of repertoire, the development of cognitive (verbal language and communication), sociocognitive (shared attention) and behavioral (social skills) skills, better guidance of parents and caregivers (psychoeducation and development of management strategies).

A possible diagnostic delay – due to various factors such as ethnicity, low family income, lack of stimulation in childhood, lack of information and perception of parents/guardians about child development and signs of autism – may evidence a cementation of the symptoms in the long term (worsening of clinical signs) and the consequences of the disease: insensitivity to pain or sensory hypersensitivity, without fear of danger (it causes accidents), inability of the brain to change its structure based on extrinsic stimuli in early childhood (neuroplasticity), ineffectiveness of interventions, deficient adaptation and rehabilitation of the child, impairment of cognitive, social, sensory and behavioral development (Silva; Araújo; Dornelas, 2020; Doubrawa; Menezes, 2023).

4 GENETIC FACTORS

4.1 AUTISM GENETICS: OVERVIEW

Autism Spectrum Disorder (ASD) is characterized by persistent difficulties in social communication and restricted, repetitive patterns of behavior, interests, or activities. In recent years, significant advances in the field of genetics have contributed to understanding the biological mechanisms underlying ASD, revealing that genetic factors play a central role in the etiology of the disorder (Ramaswami *et al.*, 2018).

Heritability studies indicate that between 50% and 90% of the risk of developing ASD can be explained by genetic factors, suggesting a substantial contribution of hereditary variants and *de novo mutations* (Sanders *et al.*, 2018). Genome-wide association analyses (GWAS) have identified multiple risk-related *loci* for ASD, including genes involved in synaptic regulation, neuronal development, and modulation of brain plasticity (Grove *et al.*, 2019).

In addition, investigations have pointed out that ASD is genetically heterogeneous, with rare variants of great effect, such as chromosomal deletions or duplications (CNVs), coexisting with common variants of small effect (Satterstrom *et al.*, 2020). This genetic diversity may explain the wide clinical and phenotypic variability observed among individuals on the spectrum.

Research also suggests that changes in gene expression during brain development, especially in the prenatal period and in the first years of life, play a relevant role in the manifestation of ASD. Transcriptomic studies reveal abnormal patterns of gene coexpression in neural networks of different forms, mainly affecting regions associated with sociability and language (Werling *et al.*, 2020).

From a translational point of view, the identification of genetic variants associated with ASD opens up possibilities for the development of biomarkers and personalized therapies. Although still far from routine clinical practice, genetic analysis is already used in some contexts to assist in differential diagnosis and family genetic counseling (Lord *et al.*, 2020).

However, the researchers warn that ASD cannot be understood exclusively by genetics. Environmental factors, such as antenatal complications, exposure to pollutants, and maternal infections, interact with genetic predisposition to modulate risk (Karimi *et al.*, 2017). Thus, understanding ASD requires a multifactorial approach, integrating genomic, epigenetic, and environmental data.

Recent literature points to the need for broader and more diverse studies, especially involving populations underrepresented in current research, in order to expand the generalizability of findings and reduce biases (Grove *et al.*, 2019). The integration of large international genetic databases, combined with advances in artificial intelligence for data

analysis, promises to accelerate discoveries and open new frontiers in understanding the biology of autism.

In summary, the evidence points to ASD resulting from a complex network of genetic and environmental interactions, with multiple biological pathways converging to changes in brain development and functioning. The elucidation of these mechanisms is essential to advance in more effective diagnostic and therapeutic strategies.

Studies of the autism genome have shown that although *de novo* mutations occur in many different genes, these genes tend to form densely connected protein-protein interaction networks (PPI) converging on common biological pathways, like a cascade. By integrating data from six studies using *StringDB* (an online database that gathers information on interactions between proteins), it was observed that networks based on mutated genes in probands were significantly more connected than random networks or networks based on sibling or synonymous mutations, showing that the fruit of mutations does not come from chance, nor from a family bias. In addition, two major functional blocks were evidenced: one of postsynaptic synaptic proteins (e.g., SYNGAP1, DLG4, GRIN2A/B, NLGN1, NRXN1) and another involving WNT signaling (CTNNB1, DLL1, TBL1XR1) and chromatin remodeling (CHD8), suggesting that heterogeneous mutations converge to central processes in neuronal development and functioning (Krumm *et al.*, 2014).

On the other hand, population and twin studies show that ASD has a strong genetic basis, with an estimated heritability of 83% to 87%, indicating that most of the variation in the phenotype is explained by additive genetic factors. Non-shared environmental influences contributed about 17% of the variation, while the effect of shared household environmental factors was small or negligible (Sandin *et al.*, 2017).

De novo mutations, formed spontaneously in the individual and absent in the parental genome, represent an important source of genetic variability associated with Autism Spectrum Disorder (ASD). These mutations, as well as those inherited from affected parents, are more likely to exert a pathogenic effect. However, the contribution of variants inherited from phenotypically healthy parents to the manifestation of ASD cannot be excluded, since such alterations may present incomplete penetrance and variable expressivity (Ribeiro, 2013; Coutinho, Bosso, 2015).

The occurrence of point mutations in the germline has been associated with advanced parental age, especially paternal age. With aging, there is a progressive accumulation of mutations in germ cells, which can be transmitted to the embryo during conception. This process may also favor the emergence of new *Copy Number Variations (CNVs)*, so that older

parents constitute a potential reservoir for such mutational events. In addition, mutations originating in the male germline tend to have greater penetrance (Coutinho, Bosso, 2015).

Several studies have identified the participation of multiple genes associated with the risk of developing ASD, evidencing the polygenic and heterogeneous nature of the disorder. Among the genes described in the literature, MDGA2, FHIT, HTR2A, SHANK2, GRIA3, ZNF778, PRKCA, CDH15, DIAPH3, GCH1, GRM5, MARK1, SLC17A6, IMMP2L, BZRAP1, SYNGAP1, ANK3, MAP1A, GABRR2, LAMC3, LRRC7, LRRIQ3, CADPS1, NUFIP, SEMA3A, SNAP29, MBD2, GAD2, DGKH, and PARD3 stand out, which participate in fundamental processes for the functioning of the nervous system, including synaptic organization, neurotransmission, neuronal plasticity, and brain development (Ribeiro, 2013).

In addition to changes in the DNA sequence, epigenetic mechanisms also play a relevant role in the pathophysiology of ASD. DNA methylation (mDNA) consists of an epigenetic modification characterized by the addition of a methyl group ($-CH_3$) to position 5 of the cytosine base, resulting in the formation of 5-methylcytosine (5mC). This process regulates gene expression without altering the nucleotide sequence and allows genetic and environmental factors to act together in modulating the phenotype. Thus, changes in methylation patterns can influence the expression of genes involved in neuronal development and function, contributing to the clinical manifestation of ASD (Martin, Fry, 2018; Smith *et al.*, 2014).

A Genetic Ontology analysis of ASD risk genes revealed enrichment in neuronal signals, neurogenesis, chromatin remodeling, and transcriptional regulation, indicating that these genes are clustered in specific biological processes (Lin *et al.*, 2020). These findings complement the results of protein–protein interaction networks, which show that different but interconnected genes act on common functional pathways related to brain development and function.

Recent studies suggest that mosaic somatic mutations, which affect only part of the body's cells, contribute modestly to autism risk, accounting for about 5–7.5% of *de novo mutations*. These mutations can occur in genes that are different from those identified in germline studies and influence the phenotype differently. Postmortem prefrontal cortex sequencing has identified potentially harmful somatic mutations, including changes in regulators of gene expression, indicating that these mutations may affect the underlying neurobiology of ASD (Dias *et al.*, 2020). Future studies with brain DNA and analyses of non-coding regions are needed to better understand the contribution of somatic mutations to the pathogenesis of autism.

5 FINAL CONSIDERATIONS

Autism was long considered to be of low prevalence (1/1000 children) in the population. Today this rate is 1/160, and it is quite likely that it will rise in the coming years (Masini, 2020). Autism is a very heterogeneous condition, with atypical social characteristics with restricted and stereotyped interests (Bourgeron, 2015). Population studies of twins have shown that some autism traits have a strong correlation with genetics and neurodevelopmental diagnosis. These studies reveal that rare variants with a large effect, as well as common variants with a small effect, contribute to the increased risk of autism in the population, challenging traditional diagnosis, as there is a large clinical heterogeneity (Thapar, Rutter, 2021). Clinical heterogeneity is related to a great complexity that involves point mutations that have been inherited or spontaneous. More than 100 risk genes are involved from rare or frequent mutations that potentiate symptoms. Changes in these genes are responsible for a substantial risk to the individual and a small proportion to the population.

Most of the risk is attributable to common variants that are inherited and that act together, bringing a summation effect. Alterations in these genes normally converge to the same mechanisms, involving gene regulation events and synaptic connectivity. These mechanisms could be involved in epigenetic lack of control (Havdahl *et al*, 2021). The identification of the regions of the genome or these genes contributes to understanding a little more about ASD. However, despite many studies and an extensive list of risk genes, we have not yet observed a transformative impact for understanding the nature of genetic risk for a variety of psychiatric disorders (Devanand, *et al*, 2020).

The expansion of scientific knowledge about Autism Spectrum Disorder has highlighted the need for interdisciplinary approaches that integrate different areas of knowledge, such as genetics, neuroscience and psychology. Recent studies have shown that ASD has a strong hereditary component and great genetic heterogeneity, involving both common and rare variants that affect processes such as synaptic plasticity and neuronal development (Bourgeron, 2015; de Rubeis; Buxbaum, 2015). In this context, the advancement of genetic research has contributed to a broader understanding of the etiology of the disorder and to the development of more accurate diagnostic and therapeutic strategies.

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ANIMAL-ASSISTED THERAPY: FOUNDATIONS, BENEFITS, AND APPLICATIONS IN MENTAL HEALTH

TERAPIA ASISTIDA POR ANIMAIS: FUNDAMENTOS, BENEFÍCIOS E APLICAÇÕES NA SAÚDE MENTAL

TERAPIA ASISTIDA POR ANIMALES: FUNDAMENTOS, BENEFICIOS Y APLICACIONES EN LA SALUD MENTAL



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ABSTRACT

Animal-assisted therapy has gained increasing relevance in the field of mental health as a complementary intervention that integrates animals into therapeutic processes with the aim of promoting individuals' psychological, emotional, and social well-being. The objective of this article is to analyze the conceptual foundations of animal-assisted therapy, the psychological benefits documented in the scientific literature, and its main applications in clinical, educational, and community contexts, with special attention to contributions developed in the Latin American context. The research was conducted through a systematic literature review following PRISMA methodology guidelines. The search for information was carried out in international academic databases such as Scopus, Web of Science, PubMed, SciELO, and Google Scholar. Keywords in Spanish and English related to animal-assisted therapy and human–animal interaction were used. Scientific articles published between 2010 and 2024 were included, as well as systematic reviews, meta-analyses, and empirical studies related to psychological, clinical, or educational applications. The thematic analysis of the literature allowed the identification of five main categories: theoretical foundations of human–animal interaction, psychological and physiological effects of animal-assisted therapy, therapeutic applications in mental health, interventions in educational and community contexts, and ethical considerations in the implementation of these programs. The reviewed studies show benefits associated with stress and anxiety reduction, mood improvement, strengthening of social skills, and increased emotional well-being across diverse populations. In conclusion, animal-assisted therapy constitutes an innovative therapeutic strategy that can complement traditional mental health interventions, although further empirical research in Latin American contexts is needed.

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Keywords: Animal-Assisted Therapy. Human–Animal Interaction. Mental Health. Psychological Well-Being. Therapeutic Interventions.

RESUMO

A terapia assistida por animais tem adquirido crescente relevância no campo da saúde mental como uma intervenção complementar que integra animais aos processos terapêuticos com o propósito de promover o bem-estar psicológico, emocional e social das pessoas. O objetivo deste artigo é analisar os fundamentos conceituais da terapia assistida por animais, os benefícios psicológicos documentados na literatura científica e suas principais aplicações em contextos clínicos, educacionais e comunitários, com especial atenção às contribuições desenvolvidas no contexto latino-americano. A pesquisa foi desenvolvida por meio de uma revisão sistemática da literatura, seguindo as diretrizes da metodologia PRISMA. A busca por informações foi realizada em bases de dados acadêmicas internacionais, como Scopus, Web of Science, PubMed, SciELO e Google Scholar. Foram utilizadas palavras-chave em espanhol e inglês relacionadas à terapia assistida por animais e à interação humano–animal. Foram incluídos artigos científicos publicados entre 2010 e 2024, bem como revisões sistemáticas, meta-análises e estudos empíricos relacionados a aplicações psicológicas, clínicas ou educacionais. A análise temática da literatura permitiu identificar cinco categorias principais: fundamentos teóricos da interação humano–animal, efeitos psicológicos e fisiológicos da terapia assistida por animais, aplicações terapêuticas em saúde mental, intervenções em contextos educacionais e comunitários e considerações éticas na implementação desses programas. Os estudos revisados evidenciam benefícios associados à redução do estresse e da ansiedade, melhora do humor, fortalecimento de habilidades sociais e aumento do bem-estar emocional em diversas populações. Conclui-se que a terapia assistida por animais constitui uma estratégia terapêutica inovadora que pode complementar as abordagens tradicionais de intervenção em saúde mental, embora seja necessário fortalecer a pesquisa empírica em contextos latino-americanos.

Palavras-chave: Terapia Assistida por Animais. Interação Humano–Animal. Saúde Mental. Bem-Estar Psicológico. Intervenções Terapêuticas.

RESUMEN

La terapia asistida por animales ha adquirido creciente relevancia en el campo de la salud mental como una intervención complementaria que integra animales dentro de procesos terapéuticos con el propósito de promover el bienestar psicológico, emocional y social de las personas. El objetivo de este artículo es analizar los fundamentos conceptuales de la terapia asistida por animales, los beneficios psicológicos documentados en la literatura científica y sus principales aplicaciones en contextos clínicos, educativos y comunitarios, con especial atención a los aportes desarrollados en el contexto latinoamericano. La investigación se desarrolló mediante una revisión sistemática de literatura siguiendo los lineamientos de la metodología PRISMA. La búsqueda de información se realizó en bases de datos académicas internacionales como Scopus, Web of Science, PubMed, Scielo y Google Scholar. Se emplearon palabras clave en español e inglés relacionadas con terapia asistida por animales e interacción humano–animal. Se incluyeron artículos científicos publicados entre 2010 y 2024, así como revisiones sistemáticas, metaanálisis y estudios empíricos relacionados con aplicaciones psicológicas, clínicas o educativas. El análisis temático de la literatura permitió identificar cinco categorías principales: fundamentos teóricos de la interacción humano–animal, efectos psicológicos y fisiológicos de la terapia asistida por animales, aplicaciones terapéuticas en salud mental, intervenciones en contextos educativos y comunitarios y consideraciones éticas en la implementación de estos programas. Los estudios revisados evidencian beneficios asociados a la reducción del estrés y la ansiedad, mejora del estado de ánimo, fortalecimiento de habilidades sociales y aumento del bienestar emocional en diversas poblaciones. En conclusión, la terapia asistida por animales constituye una

estrategia terapéutica innovadora que puede complementar los enfoques tradicionales de intervención en salud mental, aunque se requiere fortalecer la investigación empírica en contextos latinoamericanos

Palabras clave: Aterapia Asistida Por Animales. Interacción Humano–Animal. Salud Mental. Bienestar Psicológico. Intervenciones Terapéuticas.

1 INTRODUCTION

In recent decades, the health sciences, psychology, and social sciences have incorporated innovative therapeutic approaches that seek to address human well-being from a holistic perspective. In this context, Animal-Assisted Therapy (AAT) emerges, a structured intervention that integrates animals into therapeutic processes with the purpose of improving people's physical, psychological, social and emotional well-being.

The relationship between humans and animals has been historically significant and is present in multiple cultures and traditions. Since the first civilizations, animals have accompanied human beings in productive, symbolic and affective activities, generating bonds that transcend the merely utilitarian. However, it is only in recent decades that this interaction has begun to be systematically studied within the scientific field, especially from disciplines such as psychology, medicine, neuroscience, education, and occupational therapy (Serpell, 2017; Fine, 2019).

Currently, animal-assisted therapy is recognized as a complementary intervention that can contribute to improving therapeutic processes in diverse populations, including children, older adults, people with disabilities, hospitalized patients, and subjects with psychological disorders (Fine, 2019; Gee, Mueller & Curl, 2017). Empirical evidence accumulated over the past few decades suggests that human-animal interaction can generate significant benefits in emotional regulation, stress reduction, strengthening social skills, and improving psychological well-being.

The growing interest in this form of intervention is related to the need to develop more humanized therapeutic strategies that favor affective bonding, emotional regulation and motivation in treatment processes. In this sense, animals not only serve a role of accompaniment, but also act as mediators that facilitate communication, social interaction and the construction of meaningful therapeutic bonds. According to Kruger and Serpell (2010), animals can function as social catalysts that favor interpersonal interaction and reduce the emotional barriers present in therapeutic contexts.

Various research developed in Latin America has begun to strengthen this field of study, analyzing the psychological and social benefits of animal-assisted interventions in educational, clinical, and community contexts. Authors such as Orozco, Quintero, and Vargas (2018) in Colombia point out that interaction with animals can favor processes of emotional regulation and socio-affective development, especially in child populations. Similarly, studies carried out in Brazil and Argentina have highlighted the potential of these interventions in psychosocial rehabilitation and therapeutic support programs (Pereira & Pires, 2016; Gutiérrez, Granados & Piar, 2019).

In Latin America, the importance of understanding the human-animal relationship from sociocultural perspectives has also been highlighted. According to Gómez and Atehortúa (2014), interaction with pets not only has therapeutic implications, but also constitutes a social and cultural phenomenon that influences the construction of affective bonds and people's psychological well-being.

Despite the growing scientific interest around human-animal interaction, there is still limited systematic understanding about the mechanisms by which animal-assisted therapy contributes to people's psychological and emotional well-being. In many clinical and educational contexts, animal interventions are implemented empirically or based on practical experiences, without always having a consolidated theoretical framework or sufficient research support.

In addition, the increase in mental health-related problems globally raises the need to explore new therapeutic strategies that complement traditional intervention approaches. According to the World Health Organization (WHO, 2022), mental disorders are one of the leading causes of disability in the world, significantly affecting the quality of life of millions of people.

In the Latin American context, these problems acquire particular characteristics due to social, economic and cultural factors that influence the psychological well-being of populations. Various studies have indicated that limited access to mental health services and the need for community intervention strategies make it necessary to explore complementary therapeutic alternatives (Ardila, 2018; Gutiérrez et al., 2019).

In the educational and community spheres, there is also an increase in problems associated with stress, anxiety, socio-emotional difficulties and social adaptation processes, particularly in child and youth populations. Various studies suggest that interaction with animals can be a valuable strategy to promote socio-emotional development and promote more accessible and empathetic therapeutic environments (Beetz, Uvnäs-Moberg, Julius & Kotrschal, 2012; Orozco et al., 2018).

Therefore, there is a need to systematically analyze the theoretical foundations and psychological benefits of animal-assisted therapy, as well as its applications in different contexts of intervention, especially in sociocultural realities of Latin America.

The study of animal-assisted therapy is gaining relevance today due to the growing recognition of interdisciplinary approaches in the understanding of human well-being. The integration of perspectives from psychology, medicine, education and social sciences has made it possible to broaden the analysis of the factors that influence people's mental health and quality of life.

From this perspective, animal-assisted therapy represents an innovative therapeutic alternative that complements traditional psychological intervention approaches. Various studies have shown that interaction with animals can generate positive effects both psychologically and physiologically, including reducing stress, reducing anxiety, and strengthening emotional bonds (Beetz et al., 2012; Pendry & Vandagriff, 2019).

Likewise, the academic analysis of this topic contributes to consolidating the field of research known as Human-Animal Interaction (HAI), which has acquired increasing relevance in the international scientific literature (Gee et al., 2017). In Latin America, this field has begun to develop through research that analyzes the impact of companion animals on emotional well-being and therapeutic processes (Gómez & Atehortúa, 2014; Pereira & Pires, 2016).

From the educational and community sphere, animal-assisted therapy also offers possibilities for intervention aimed at strengthening socio-emotional development, especially in vulnerable populations. Research carried out in Latin American countries has shown that the presence of animals in therapeutic contexts can facilitate the creation of more empathetic and less threatening environments, favoring the active participation of subjects in intervention processes (Orozco et al., 2018; Gutiérrez et al., 2019).

In this sense, this chapter is justified by the need to provide a conceptual and theoretical review that allows understanding the foundations and applications of animal-assisted therapy in the field of mental health, integrating both the international literature and the contributions developed in the Latin American context.

The conceptual development of animal-assisted therapy is linked to different theoretical approaches that seek to explain the benefits derived from the interaction between humans and animals.

One of the most important antecedents of this field is found in the work of Boris Levinson (1969), who observed that the presence of his dog during therapeutic sessions facilitated communication with children who presented emotional difficulties. Levinson proposed that animals could act as mediators in the therapeutic process, favoring emotional expression and social interaction.

Subsequently, the field of research on human-animal interaction has expanded considerably. Authors such as Serpell (2017) have highlighted that the relationship between humans and animals has profound psychological and social implications, since animals can provide emotional support, companionship and opportunities for social interaction.

From the perspective of attachment theory, proposed by Bowlby (1988), human beings tend to establish affective bonds with figures that provide security and protection. In this

sense, animals can fulfill functions similar to attachment figures, generating feelings of trust, emotional stability, and affective support (Beetz et al., 2012).

On the other hand, recent research in the field of neuroscience has shown that interaction with animals can generate physiological changes associated with emotional well-being. Studies carried out by Odendaal (2000) and later expanded by Beetz et al. (2012) have shown that contact with animals can increase the release of oxytocin, a hormone related to attachment and well-being, while reducing cortisol levels, associated with stress.

Similarly, the Human-Animal Interaction approach has made it possible to integrate contributions from different disciplines to understand the psychological and social effects of this relationship. According to Gee, Mueller, and Curl (2017), the presence of animals can promote socialization processes, improve people's emotional state, and contribute to the development of socio-emotional skills.

In the Latin American context, some researchers have begun to explore these phenomena from interdisciplinary perspectives. Gómez and Atehortúa (2014) highlight that the relationship between humans and animals should also be understood as a cultural and social phenomenon that influences the construction of affective bonds and care practices. Likewise, studies carried out in Brazil and other countries in the region have analyzed the impact of animal-assisted interventions on rehabilitation processes and therapeutic accompaniment (Pereira & Pires, 2016).

Together, these theoretical approaches allow us to understand animal-assisted therapy as a therapeutic strategy that articulates psychological, social, and biological dimensions of human well-being.

Finally, this chapter aims to analyze the conceptual foundations of animal-assisted therapy, its theoretical bases, the psychological benefits documented in the scientific literature and its main applications in clinical, educational and community contexts.

2 METHODOLOGY

The methodology of this chapter was developed through a systematic review of scientific literature, guided by the guidelines established in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology, widely used in review research within the health sciences and social sciences due to its ability to guarantee transparency, methodological rigor and replicability in the process of selection and analysis of scientific studies (Page et al., 2021; Moher et al., 2009). In this sense, a structured search of information was carried out in internationally recognized academic databases, including Scopus, Web of Science, PubMed, Scielo and Google Scholar, with the purpose of identifying

relevant literature related to animal-assisted therapy and its impact on mental health and psychological well-being. The search strategy was developed by using combinations of keywords in Spanish and English, such as animal-assisted therapy, animal-assisted interventions, human-animal interaction, animal-assisted therapy, animal-assisted therapy AND mental health and animal-assisted therapy AND psychology, using Boolean operators AND and OR in order to expand or delimit the results obtained in the databases (Booth, Sutton & Papaioannou, 2016). To guarantee the relevance and quality of the studies analyzed, previously defined inclusion and exclusion criteria were established. Within the inclusion criteria, scientific articles published in indexed journals, research published between 2010 and 2024, studies related to animal-assisted therapy in psychological, clinical or educational contexts, as well as empirical research, systematic reviews and meta-analyses available in Spanish or English were considered. On the other hand, duplicate documents in different databases, articles that did not have peer review, research focused only on pet ownership without a therapeutic approach, and documents that did not have access to the full text were excluded. The study selection process was carried out following the four phases proposed by the PRISMA model, which include identification, screening, eligibility and inclusion, which allowed the initial location of studies in the databases, then the review of titles and abstracts to determine their relevance to the object of study, the complete reading of potentially relevant articles and, finally, the inclusion of those documents that provided significant scientific evidence for the conceptual development of the chapter (Page et al., 2021). Subsequently, the selected studies were analyzed through a process of thematic content analysis, which allowed the identification of recurrent conceptual categories in the scientific literature, among which the theoretical foundations of human-animal interaction, the psychological and physiological effects of animal-assisted therapy, its applications in the field of mental health, and the effects of the Animal Therapy Therapy Animal Therapy T interventions developed in educational contexts and ethical considerations related to the implementation of animal-assisted therapy programs. The organization and systematization of these categories made it possible to structure the development of the chapter and consolidate an integrative perspective on the contributions of animal-assisted therapy in the promotion of psychological and social well-being

3 RESULTS

From the process of systematic review of the scientific literature and the thematic analysis of the selected studies, several analytical categories were identified that allow us to understand the main contributions of animal-assisted therapy in the field of mental health and

psychological well-being. These categories include: theoretical foundations of human-animal interaction, psychological and physiological effects of animal-assisted therapy, therapeutic applications in mental health contexts, interventions in educational and community contexts, and ethical considerations in the implementation of animal-assisted therapy programs.

3.1 THEORETICAL FOUNDATIONS OF HUMAN-ANIMAL INTERACTION

One of the main findings identified in the reviewed literature corresponds to the development of theoretical frameworks that explain the benefits of human-animal interaction. This field of research, known as Human-Animal Interaction (HAI), has been approached from different disciplines, including psychology, medicine, sociology and ethology.

One of the most relevant antecedents in this field was raised by Levinson (1969), who introduced the concept of pet therapy when he observed that the presence of his dog during therapeutic sessions facilitated emotional communication in children with psychological difficulties. From these initial observations, it began to be recognized that animals can act as therapeutic mediators, favoring emotional expression, trust and social interaction.

Subsequently, several researchers expanded this approach. Serpell (2017) points out that the human-animal relationship can generate emotional, social, and psychological benefits due to the ability of animals to offer companionship, emotional support, and opportunities for social interaction. In this sense, interaction with animals can contribute to reducing feelings of loneliness and promoting psychological well-being.

Another conceptual framework widely used to explain the effects of animal-assisted therapy is attachment theory, proposed by Bowlby (1988). From this perspective, animals can perform functions similar to attachment figures, providing emotional security, affective stability, and support in stressful situations. Research has shown that people can develop meaningful emotional bonds with animals, which contributes to emotional well-being and strengthened affective regulation.

Likewise, research in the field of neuroscience has shown that interaction with animals produces physiological changes associated with well-being. Studies conducted by Odendaal (2000) and later by Beetz et al. (2012) have shown that contact with animals can increase the release of oxytocin – a hormone related to attachment and trust – and decrease cortisol levels, which contributes to stress reduction.

Together, these theoretical approaches allow us to understand animal-assisted therapy as an intervention that integrates biological, psychological and social dimensions, favoring the integral well-being of people.

3.2 PSYCHOLOGICAL AND PHYSIOLOGICAL EFFECTS OF ANIMAL-ASSISTED THERAPY

Another of the emerging categories of the literature analysis corresponds to the psychological and physiological effects derived from interaction with animals in therapeutic contexts.

Various studies have shown that animal-assisted therapy can contribute to the reduction of stress and anxiety, improve mood and promote emotional regulation. In an experimental study conducted with university students, Pendry and Vandagriff (2019) found that participation in brief animal interaction programs significantly reduced levels of perceived stress.

Similarly, research carried out in hospital contexts has shown that the presence of animals during hospitalization processes can reduce anxiety, improve the perception of well-being, and generate more positive therapeutic environments for patients (Kamioka et al., 2014).

Physiological benefits have also been documented in the scientific literature. Several studies have found that interaction with animals can contribute to reducing blood pressure, lowering heart rate, and generating physiological responses associated with relaxation (Beetz et al., 2012; Fine, 2019). These effects are related to the neurobiological mechanisms that are activated during affective contact with animals.

In addition to the physiological benefits, the literature also highlights the positive impact of these interventions on emotional well-being and self-esteem. Interaction with animals can generate feelings of affection, empathy, and responsibility, which contributes to the strengthening of self-esteem and the development of positive emotional bonds (Serpell, 2017).

3.3 APPLICATIONS OF ANIMAL-ASSISTED THERAPY IN MENTAL HEALTH

The literature review also evidenced various applications of animal-assisted therapy in the field of mental health. In many cases, these interventions are used as a complement to traditional psychological treatments.

Research has documented the use of animal-assisted therapy in the treatment of depressive disorders, anxiety disorders, post-traumatic stress disorder, and autism spectrum disorders. In these contexts, animals can facilitate emotional communication and strengthen the therapeutic relationship between the patient and the mental health professional.

For example, studies conducted with war veterans have shown that interaction with assistance dogs can contribute to reducing symptoms associated with post-traumatic stress disorder and improve patients' quality of life (O'Haire & Rodriguez, 2018).

Likewise, research carried out with children with autism spectrum disorder has shown that the presence of animals during therapeutic interventions can improve social skills, increase interaction with other people and promote emotional expression (O'Haire, 2013).

In older adults, animal-assisted therapy has also been shown to be an effective strategy for reducing feelings of loneliness, improving mood, and promoting social participation (Banks & Banks, 2002).

3.4 INTERVENTIONS IN EDUCATIONAL AND COMMUNITY CONTEXTS

In addition to its application in clinical contexts, animal-assisted therapy has been implemented in educational and community settings, where it has been used as a strategy to promote socio-emotional development and improve learning processes.

One of the most widespread programs in this area is dog-assisted reading, in which students read aloud to trained animals. This type of intervention has been shown to reduce anxiety associated with reading in public and improve motivation towards reading (Hall et al., 2016).

Likewise, research carried out in school contexts has shown that the presence of animals can favor the development of empathy, improve school coexistence and strengthen students' socio-emotional skills.

In Latin America, several studies have begun to explore the potential of these interventions in educational and community contexts, highlighting their usefulness in social inclusion programs, psychosocial intervention, and promotion of well-being.

3.5 ETHICAL CONSIDERATIONS IN THE IMPLEMENTATION OF ANIMAL-ASSISTED THERAPY PROGRAMS

Finally, the scientific literature also emphasizes the importance of considering ethical aspects in the implementation of animal-assisted therapy programs. These considerations include both the welfare of human participants and the welfare of the animals involved in the interventions.

According to Fine (2019), animal-assisted therapy programs must ensure that animals receive adequate training, veterinary care, and appropriate working conditions, avoiding situations of stress or overload.

Likewise, it is necessary that interventions be developed by trained professionals who understand both the principles of therapeutic practice and the needs and behaviors of animals.

Respect for animal welfare and the implementation of appropriate ethical protocols are fundamental elements to guarantee the sustainability and effectiveness of animal-assisted therapy programs.

4 CONCLUSIONS

The systematic review of the literature carried out in this chapter allows us to conclude that animal-assisted therapy (AAT) has been consolidated in recent decades as a relevant complementary strategy within the intervention processes in mental health, education and psychosocial contexts. The studies analyzed show that human-animal interaction is an interdisciplinary field of increasing scientific development, which integrates contributions from psychology, medicine, neuroscience and social sciences to understand the therapeutic effects derived from the bond between humans and animals.

First, the theoretical foundations reviewed show that the human-animal relationship can be explained from different conceptual approaches, among which the attachment theory, the perspectives of human-animal interaction and the findings from neuroscience stand out. These approaches coincide in pointing out that animals can act as emotional and social facilitators, generating affective bonds that promote feelings of security, trust and well-being. Likewise, neurobiological evidence suggests that interaction with animals can activate physiological mechanisms associated with emotional regulation, such as increased oxytocin and decreased cortisol, which contributes to stress reduction.

Second, the literature analyzed evidences that animal-assisted therapy can produce significant psychological and emotional benefits. Among the most reported effects are the reduction of stress and anxiety, the improvement of mood, the strengthening of self-esteem and the development of social skills. These benefits have been observed in various populations, including children, older adults, hospitalized patients, and people with different mental health conditions.

Likewise, the studies reviewed show that AAT has been implemented with positive results in different intervention contexts, especially in the clinical, educational and community settings. In the field of mental health, these interventions have been shown to contribute to the approach of disorders such as depression, anxiety, autism spectrum disorder and post-traumatic stress disorder, acting as a complementary resource within traditional therapeutic processes. Similarly, in educational contexts it has been shown that the presence of animals

can favor socio-emotional development, improve motivation towards learning and strengthen social interaction among students.

On the other hand, the literature reviewed highlights the importance of considering ethical principles in the implementation of animal-assisted therapy programs, emphasizing the need to guarantee both the well-being of the participants and that of the animals involved in the interventions. In this sense, it is essential that these programs are developed by trained professionals and that adequate protocols for the care, training and handling of animals are established.

Finally, although the results of the research analyzed show the potential of animal-assisted therapy as a therapeutic tool, some limitations in the literature are also identified, such as the need to expand empirical studies with more robust methodological designs, as well as to strengthen scientific production in Latin American contexts. Consequently, future research could deepen the evaluation of the effectiveness of these interventions in different populations and cultural contexts, as well as the development of intervention models that systematically integrate animal-assisted therapy within mental health care programs.

In summary, the available scientific evidence allows us to affirm that animal-assisted therapy is an innovative and promising strategy for the promotion of psychological and social well-being, whose development and application can significantly contribute to the strengthening of more comprehensive, humanized therapeutic practices focused on the well-being of people.

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LISTENING PROJECT: ACTIVE LISTENING WITH PATIENTS IN PALLIATIVE CARE

PROJETO ESCUTAÇÃO: A ESCUTA ATIVA COM PACIENTES EM CUIDADOS PALIATIVOS

PROYECTO ESCUCHA: LA ESCUCHA ACTIVA CON PACIENTES EN CUIDADOS PALIATIVOS



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ABSTRACT

This paper presents an experience report on the EscutAção Project, developed by students from the Catholic University of Pelotas (UCPel), focusing on the application of active listening with patients under palliative care. The main objective of the initiative is to address the biopsychosocial demands of users from the Palliative Care Unit and the Outpatient Clinic of Integrative and Complementary Health Practices, providing a space for relief from psychosomatic suffering and strengthening the bond among professionals, patients, and their families. Partial results indicate a significant improvement in the emotional well-being of participants, a reduction in social isolation, and the identification of vulnerabilities such as family burden and domestic violence. For the extension students, the practice enables the development of communication skills, empathy, and professional ethics. Therefore, it is concluded that active listening constitutes a fundamental therapeutic and humanized tool, capable of promoting dignity and comprehensive health care in the face of life-limiting conditions.

Keywords: Active Listening. Palliative Care. Humanization. University Extension.

RESUMO

O presente trabalho apresenta um relato de experiência sobre o Projeto EscutAção, desenvolvido pelos estudantes da Universidade Católica de Pelotas (UCPel), com foco na aplicação da escuta ativa em pacientes sob cuidados paliativos. O objetivo central da iniciativa é acolher as demandas biopsicossociais de usuários da Unidade Cuidativa e do Ambulatório de Práticas Integrativas e Complementares em Saúde, proporcionando um espaço de alívio para o sofrimento psicossomático e fortalecendo o vínculo entre profissionais, pacientes e familiares. Os resultados parciais indicam uma melhora significativa no bem-estar emocional dos participantes, a redução do isolamento social e a

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identificação de vulnerabilidades, como sobrecarga familiar e violência doméstica. Para os extensionistas, a prática viabiliza o aprimoramento de competências comunicacionais, empatia e ética profissional. Portanto, conclui-se que a escuta ativa configura-se como uma ferramenta terapêutica e humanizada fundamental, capaz de promover a dignidade e o cuidado integral em saúde diante de condições limitantes da vida.

Palavras-chave: Escuta Ativa. Cuidados Paliativos. Humanização. Extensão Universitária.

RESUMEN

El presente trabajo presenta un informe de experiencia sobre el Proyecto EscutAção, desarrollado por estudiantes de la Universidad Católica de Pelotas (UCPel), con enfoque en la aplicación de la escucha activa en pacientes bajo cuidados paliativos. El objetivo central de la iniciativa es acoger las demandas biopsicosociales de los usuarios de la Unidad de Cuidados Paliativos y del Ambulatorio de Prácticas Integrativas y Complementarias en Salud, proporcionando un espacio de alivio para el sufrimiento psicosomático y fortaleciendo el vínculo entre profesionales, pacientes y familiares. Los resultados parciales indican una mejora significativa en el bienestar emocional de los participantes, la reducción del aislamiento social y la identificación de vulnerabilidades, como la sobrecarga familiar y la violencia doméstica. Para los estudiantes extensionistas, la práctica permite el desarrollo de competencias comunicativas, empatía y ética profesional. Por lo tanto, se concluye que la escucha activa se configura como una herramienta terapéutica y humanizada fundamental, capaz de promover la dignidad y el cuidado integral en salud frente a condiciones limitantes de la vida.

Palabras clave: Escucha Activa. Cuidados Paliativos. Humanización. Extensión Universitaria.

1 INTRODUCTION

This report was based on the experiences provided by the Listening Project, developed by the Catholic University of Pelotas. The actions in this report focused on patients in palliative care. Palliative care is health actions and services for the relief of pain, suffering, and other symptoms in individuals who face health conditions that threaten or limit the continuity of life, according to the definition expressed in Ordinance 3,681 of May 7, 2024 on the National Palliative Care Policy.

Therefore, active listening, as it is the act of listening attentively to improve communication between the professional and the individual to be welcomed, is an ally of health professionals from various specialties, especially those who work in care services for these patients. Attentive and welcoming listening to patients is crucial to identify physical symptoms and alleviate psychosomatic and psychological symptoms, but in addition to the patients, it was also necessary to listen to the companions and family members who face the process alongside the patients.

The EscutAção Project, which made it possible to carry out the listening actions, aims to understand the demands of users of the Outpatient Clinic of Integrative and Complementary Practices in Health and the Care Unit – Reference Center for Palliative Care, both places of operation of the Catholic University of Pelotas, and to provide welcome to those who seek extension workers.

Welcoming activities through active listening help to decongest care services for palliative patients, because, as exposed by CASTRO (2022), many individuals only need a moment to externalize the emotional issues that surround them. In this case, many of them are adjacent to the chronic diseases treated in the services, so when they meet the extension workers, the patients can be welcomed without interrupting the services provided at the institution.

2 METHODOLOGY

This is a descriptive study of the experience report type, based on the listening carried out in the premises of the health services of the Catholic University of Pelotas by extension students of the Medicine and Psychology courses. The listening activities were carried out in a non-structured way, according to the listening needs of the service users.

The listening sessions did not have a predetermined duration, and could be brief or extensive depending on the emotional and physical needs of the sheltered people. At the end of listening to each patient, a brief questionnaire was applied to evaluate the activity

performed, with the purpose of improving the processes. After each listening, the students prepared a report of the activity, to ensure the registration of the demands and results.

3 REPORTS AND IMPACTS GENERATED

The Project's activities began in May 2025 and so far, listening has been carried out in the different health care scenarios mentioned in the introduction, which have involved elderly and adult people living with chronic diseases and the issues that permeate them, such as family overload, domestic violence and loneliness, themes related to palliative care both in the context of those who are facing diseases that threaten the continuity of life, and the family members who follow the process.

As a result, it was noticeable the improvement in the emotional well-being of the participants, the strengthening of support networks and the identification of some recurring issues, such as social isolation, psychological suffering and difficulties in accessing adequate diagnoses. Given the benefits of listening, at present, the project is in progress, with periodic activities, systematic records and constant monitoring of the advisors (professionals in the field of Nursing) to evaluate its impacts, which, so far, have proved to be the promotion of emotional comfort, appreciation of the life stories of the participants, reduction of social isolation and the awareness of the community for humanized listening practices, which, in general, translates into health promotion in underexplored spheres.

As for the extension workers, there were significant contributions of the action to their academic training, such as the improvement of communication skills, critical sense and ethical commitment, as well as the exercise of empathy, preparing them for a more humanized professional performance and integrated with the social reality.

4 FINAL CONSIDERATIONS

Finally, the EscutAção Project demonstrates the importance of active listening as an essential practice in health care, especially in palliative care contexts. The action fulfills the objective of offering humanized welcoming, strengthening bonds between patients, families and services, in addition to providing a legitimate space for expression and emotional relief.

For the community, the activities are an opportunity to value subjectivity and promote dignity in coping with limiting living conditions. For the university, they reinforce the relevance of university extension as a bridge between academic knowledge and social needs.

From a formative point of view, the experience contributes to the formation of future professionals who are more sensitive, ethical and prepared to deal with the complexity of health care, strengthening communication skills and promoting the practice of empathy. Thus,

it is evident that active listening, in addition to being a therapeutic tool, is also a transformative practice that broadens the view of comprehensive health care.

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THE INFLUENCE OF RELIGIOSITY AND SPIRITUALITY ON MENTAL HEALTH: PERSPECTIVES FROM PSYCHOLOGY IN CONTEMPORARY TIMES

A INFLUÊNCIA DA RELIGIOSIDADE E ESPIRITUALIDADE NA SAÚDE MENTAL: PERSPECTIVAS DA PSICOLOGIA NA CONTEMPORANEIDADE

LA INFLUENCIA DE LA RELIGIOSIDAD Y LA ESPIRITUALIDAD EN LA SALUD MENTAL: PERSPECTIVAS DE LA PSICOLOGÍA EN LA CONTEMPORANEIDAD



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ABSTRACT

Spirituality and religiosity are dimensions that have accompanied humanity throughout history, influencing how individuals deal with suffering and construct meaning in life. In recent decades, psychology has shown increasing interest in these phenomena, particularly in their relationship with mental health. This study, of a basic nature and qualitative approach, aims to analyze the positive and negative impacts of spirituality and religiosity on psychological distress, considering cultural, social, and individual aspects. The methodology consisted of a bibliographic review of scientific articles published in the SciELO, PePSIC, and Revista PPC databases. The results indicate that spirituality and religiosity can function as protective factors, promoting well-being, emotional resilience, and social support, especially when used as coping mechanisms in the face of adversity. On the other hand, rigid religious practices, marked by dogmas and moral punishment, may intensify psychological suffering, contributing to the worsening of conditions such as anxiety, depression, and psychotic disorders. Furthermore, conflicts between religious beliefs and therapeutic interventions may lead to resistance to treatment. In summary, based on the studies analyzed, it can be concluded that spirituality/religiosity is intrinsically present in the individual's life and social context, constituting an important source of support in perceiving the world and coping with adversity. However, it is observed that while spirituality may represent support and subjective

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strengthening, when experienced or imposed excessively, it may be associated with psychopathological conditions, in which feelings of guilt and condemnation emerge as central elements of the experience.

Keywords: Religiosity. Spirituality. Psychology. Mental Health. Religious Coping. Psychology of Religion.

RESUMO

A espiritualidade e religiosidade são dimensões que acompanham a humanidade ao longo da história, influenciando como os indivíduos lidam com o sofrimento e constroem sentido para a vida. Nas últimas décadas, a psicologia tem demonstrado crescente interesse por esses fenômenos, sobretudo em sua relação com a saúde mental. Este estudo, de natureza básica e abordagem qualitativa, tem como objetivo analisar os impactos positivos e negativos da espiritualidade e da religiosidade no adoecimento psíquico, considerando aspectos culturais, sociais e individuais. A metodologia consistiu em revisão bibliográfica de artigos científicos publicados nas bases SciELO, PePSIC e Revista PPC. Os resultados apontam que a espiritualidade e a religiosidade podem funcionar como fatores de proteção, promovendo bem-estar, resiliência emocional e suporte social, especialmente quando utilizadas como mecanismos de enfrentamento (coping) frente a adversidades. Por outro lado, práticas religiosas rígidas, marcadas por dogmas e punições morais, podem intensificar o sofrimento psíquico, contribuindo para o agravamento de quadros como ansiedade, depressão e transtornos psicóticos. Além disso, conflitos entre crenças religiosas e intervenções terapêuticas podem gerar resistência a tratamento. Em suma, norteados pelos estudos realizados, pode-se concluir que a espiritualidade/religiosidade está intrinsecamente presente na vida do indivíduo e em seu contexto social, configurando-se como importante amparo na forma de perceber o mundo e enfrentar adversidades. Contudo, observasse que, se por um lado a espiritualidade pode representar suporte e fortalecimento subjetivo, por outro, quando vivida ou imposta de maneira excessiva, pode associar-se a quadros psicopatológicos, nos quais sentimento de culpa e condenação emergem como elementos centrais da experiência.

Palavras-chave: Religiosidade. Espiritualidade. Psicologia. Saúde Mental. Coping Religioso. Psicologia da Religião.

RESUMEN

La espiritualidad y la religiosidad son dimensiones que acompañan a la humanidad a lo largo de la historia, influyendo en cómo los individuos afrontan el sufrimiento y construyen sentido para la vida. En las últimas décadas, la psicología ha demostrado un creciente interés por estos fenómenos, especialmente en su relación con la salud mental. Este estudio, de naturaleza básica y enfoque cualitativo, tiene como objetivo analizar los impactos positivos y negativos de la espiritualidad y la religiosidad en el padecimiento psíquico, considerando aspectos culturales, sociales e individuales. La metodología consistió en una revisión bibliográfica de artículos científicos publicados en las bases SciELO, PePSIC y Revista PPC. Los resultados indican que la espiritualidad y la religiosidad pueden funcionar como factores de protección, promoviendo el bienestar, la resiliencia emocional y el apoyo social, especialmente cuando se utilizan como mecanismos de afrontamiento (coping) frente a adversidades. Por otro lado, las prácticas religiosas rígidas, marcadas por dogmas y sanciones morales, pueden intensificar el sufrimiento psíquico, contribuyendo al agravamiento de cuadros como ansiedad, depresión y trastornos psicóticos. Además, los conflictos entre creencias religiosas e intervenciones terapéuticas pueden generar resistencia al tratamiento. En suma, guiado por los estudios realizados, se puede concluir que la espiritualidad/religiosidad está intrínsecamente presente en la vida del individuo y en su contexto social, configurándose como un importante apoyo en la forma de percibir el

mundo y afrontar adversidades. Sin embargo, se observa que, si bien la espiritualidad puede representar soporte y fortalecimiento subjetivo, por otro lado, cuando es vivida o impuesta de manera excesiva, puede asociarse a cuadros psicopatológicos, en los cuales los sentimientos de culpa y condena emergen como elementos centrales de la experiencia.

Palabras clave: Religiosidad. Espiritualidad. Psicología. Salud Mental. Afrontamiento Religioso. Psicología de la Religión.

1 INTRODUCTION

Religiosity and spirituality have accompanied human beings throughout history and configure important dimensions of identity and subjective experience. In recent years, these topics have gained prominence in psychology, especially in the field of mental health (Zangari and Machado, 2022). However, given the religious diversity and prejudices still present in the social imaginary, it is necessary to analyze them with caution. This paper investigates how spirituality and religiosity influence psychic illness, based on the hypothesis that both can act as protective factors when employed as coping strategies, but can also produce negative effects when marked by rigidity and dogmatism.

The conceptual distinction between religiosity and spirituality is fundamental to understand its clinical implications. Pargament (1997) defines spirituality as a personal search for meaning, connection, and purpose, while religiosity refers to institutionalized systems of beliefs and practices. Although related, they are different dimensions, and both are perceived by individuals as relevant elements for maintaining mental balance and biopsychosocial well-being.

In the context of psychological coping, coping is understood as cognitive and behavioral efforts that change as the person tries to manage demands evaluated as stressful. These efforts are not necessarily aimed at controlling the stressor, but at managing it by reducing its effects, tolerating it, or attempting to change. Thus, religious and spiritual practices can work as part of these coping mechanisms, directly influencing the way the individual deals with situations of suffering.

Although often treated as a recent area, the Psychology of Religion has deep roots. Classical authors such as Wundt, James, Freud, Jung, Hall and Frankl already investigated the relationship between religious phenomena and psychic processes. In Brazil, this field has been institutionally strengthened with ANPEPP's "Psychology & Religion" Working Group, which since the 1990s has promoted seminars and brought together researchers from various universities.

The general objective of this study is to analyze the impacts of religiosity and spirituality on mental health, addressing its historical development, the mechanisms of religious coping and the effects of these practices in different sociocultural and individual contexts. The relevance of the research lies in the growing contemporary adherence to spiritual and religious practices, which requires psychology to have a greater understanding of how these dimensions operate in coping with psychopathological conditions. The choice of the theme is also justified by the strong presence of religious symbols and beliefs in everyday life, which demands a critical and contextualized approach.

2 METHODOLOGY

The present study is characterized as a qualitative research, of exploratory and descriptive character, with a bibliographic approach. The choice for this methodology is due to the objective of understanding, from a theoretical and interpretative perspective, the relationships between religiosity, spirituality and mental health, as well as their implications for psychological practice in contemporary times.

According to Gil (2010), bibliographic research is based on the analysis of materials already published, enabling the deepening of knowledge based on consolidated theoretical contributions. The search for the publications took place in the bases **SciELO**, **PePSIC** e **PubMed**, using combinations of the following keywords in Portuguese and English: *religiosity*, *Spirituality*, *Mental Health*, *coping religious*, *Psychology of religion*. Texts published between **1990 and 2024**, as well as classic works of psychology and sociology (such as Freud, Jung and Durkheim), whose historical relevance justifies their permanence even outside the established time frame.

The inclusion criteria adopted for the selection of bibliographic material were: (a) studies that address the relationship between spirituality/religiosity and mental health; (b) studies that discuss the role of these dimensions as protective or risk factors; (c) publications that deal with the psychological approach to the subject; and (d) theoretical reference works in the Psychology of Religion. Materials of a merely devotional or essayistic nature without scientific basis, or that did not have a direct relationship with the proposed theme were excluded.

The analysis of the selected materials was carried out through thematic content analysis, according to the proposal of Bardin (2016). The procedure involved three main stages: (1) pre-analysis, with floating reading and organization of the *corpus*; (2) exploration of the material, with identification of thematic categories, such as spirituality, religiosity, *religious coping* and mental health; and (3) treatment and interpretation of the results, based on a critical and dialogical reading between contemporary authors and the classics of psychology.

At the end of the selection process, a final **corpus was constituted consisting of books, scientific articles and technical documents** that supported the analysis. The content was examined through **thematic analysis**, according to Bardin (2016), seeking to identify recurrences, divergences and interpretative categories related to the positive and negative impacts of spirituality and religiosity on mental health. The results were organized in such a way as to preserve the conceptual coherence and theoretical relevance of the studies consulted.

This methodology allowed us to examine how religiosity and spirituality are understood in the contemporary psychological literature, seeking to measure to what extent these practices can contribute to psychological balance or, on the other hand, act as factors that potentiate psychic suffering. The study does not aim at statistical generalization, but at the interpretative understanding of the meanings attributed to such phenomena in the human experience and their implications for mental health care.

3 THEORETICAL FRAMEWORK

3.1 RELIGIOSITY AND SPIRITUALITY: CONCEPTUAL DISTINCTIONS AND IMPLICATIONS FOR UNDERSTANDING HUMAN EXPERIENCE

The distinction between religiosity and spirituality has been widely discussed, especially in Psychology. Although, in the common sense, the terms can be used as synonyms, in the scientific realm they represent distinct and interrelated constructs. Boff (2001) conceives religion as an institution structured by doctrines, beliefs and rituals focused on the transcendent, recognized by individuals as ways to achieve salvation, while Vasconcelos (2006) observes that spirituality manifests itself when the experience of transcendence generates profound transformations in life, going beyond the subjective dimension of the individual. Understanding this differentiation is essential to analyze how these dimensions influence mental health behaviors, cultures, and processes.

Both religiosity and spirituality can present ambivalent aspects. Alvis, Staudigl, and Louchakova-Schwartz (2023) highlight that religious phenomena can generate positive or negative effects, depending on the experience and interpretation. Rigid, doctrinal or punitive experiences tend to produce guilt, fear and intolerance, harming autonomy and personal development. In this sense, Menezes and Moreira-Almeida (2009) emphasize that unbalanced spirituality, dissociated from concrete reality, can function as an escape from difficulties, showing that critical reflection and balance are fundamental for it to contribute in a healthy way to personal development.

The integration between religious and spiritual dimensions is central to the construction of meaning. Coelho and Mahfoud (2001), when analyzing Viktor Frankl, state that spirituality and religiosity are fundamental elements of the human experience, offering purpose and meaning. This perspective is reinforced by Lima (2019), who highlights how religious multiplicity influences values, cultural practices, and ways of existing, demonstrating that these dimensions affect both subjective experience and social coexistence.

In coping with suffering, religiosity and spirituality work as coping strategies. Pargament (1997) demonstrates that religious-spiritual coping helps the individual to attribute

meaning to suffering, mobilize internal resources and restore hope. Panzini and Bandeira (2005) show that religious involvement reduces risk behaviors, strengthens community bonds and promotes belonging, reinforcing its social and protective role. Koenig (2012) complements by showing an association between religious/spiritual practices and a lower incidence of depressive symptoms, greater resilience and a reduction in suicidal behaviors.

Under developmental psychology, spirituality functions as an integrating axis between conscious and unconscious contents. Jung (1944/1968) presents the "transcendent function" as a symbolic mechanism that articulates internal polarities, favors psychic integration and directs the individual to the Self, the totalizing nucleus of the personality, part of the individuation process. Vasconcelos (2006) reinforces that spirituality guides psychological integration, while Durkheim (1912/1996) highlights the social function of religion in cohesion and in the formation of collective norms, in line with Panzini and Bandeira (2005), who highlight the strengthening of community networks.

In the juvenile context, Smith and Denton (2005) demonstrate that adolescents with greater religious involvement have superior self-control, school performance and cooperative behaviors, illustrating the role of religiosity as a moral and social structure. Seligman (2011) reinforces that the search for meaning, often linked to spirituality, is a pillar of human flourishing, converging with Pargament (1997) on the role of religious coping in the reconstruction of meaning in the face of suffering.

Studies by Moreira-Almeida and Koenig (2006) show that spiritual practices favor better adaptation to illness, greater adherence to treatments and a positive prognosis in chronic diseases, strengthening hope and acceptance. However, spiritual conflicts, such as divine punishment, religious rejection, or crises of faith, can produce relevant psychological distress (Exline et al., 2014), reinforcing the ambivalence observed by Alvis, Staudigl, and Louchakova-Schwartz (2023).

Clinical practice must recognize these symbolic, emotional, and existential resources, mobilizing them sensitively. Hefti (2011) emphasizes that integrating spirituality into therapy broadens the clinical understanding of suffering without imposing beliefs. Similarly, Seligman and Peterson (2004) demonstrate that spirituality and religiosity are associated with increased well-being, resilience and positive emotions, classifying spirituality in the virtue of Transcendence, essential for human flourishing.

Thus, the healthy integration between religiosity and spirituality strengthens emotionally, expands the existential sense and promotes integral health, being essential for professionals who investigate and understand human behavior in clinical and social contexts.

3.2 PSYCHOLOGY OF RELIGION.

The Psychology of Religion is an investigative field dedicated to the scientific study of behaviors, experiences and meanings related to religious experience. Although traditionally called "Psychology of Religion", it is not concerned with the analysis of institutionalized religion, but rather with the psychological processes emerging from religious involvement, as highlighted by Machado and Zangari (2017), when they emphasize that this area focuses on the psychological phenomenon and not on the doctrinal content of religious traditions.

Similarly, Rosa (1971) describes the Psychology of Religion as the application of psychological methods to the study of individual or collective religious behavior, reinforcing the scientific character of the area. Understanding your responsibilities and limitations is essential to avoid misinterpretations about your goals, which do not include defending or criticizing specific religions.

The field investigates the impacts that religious practices and beliefs exert on the individual and the collectivity, evaluating potentially beneficial or harmful effects, always considering the sociocultural context and the uniqueness of each person. Machado and Zangari (2017) highlight that the Psychology of Religion seeks to understand how people perceive, interpret and experience the sacred, analyzing both aspects of well-being and sources of psychological suffering associated with religiosity. In addition, it examines different forms of religious expression and disbelief, recognizing the diversity and complexity of these phenomena.

Understanding religious behavior is not restricted to a single theoretical approach or scientific method. Various methods are used, from experimental studies to qualitative and ethnographic approaches, to investigate the relationship of the individual with his beliefs. Paiva, Zangari and Verdade (2009) state that the multiplicity of methods reflects the very plurality of the religious phenomenon, which requires multidisciplinary analyses.

This area rigorously preserves its scientific and secular nature. Psychology and religiosity are distinct fields and are not subordinate to each other. Practices of a religious nature aimed at healing or spiritual counseling are not part of the psychologist's professional work; when carried out, they come close to anti-scientific practices. The Code of Professional Ethics of the Psychologist (CFP, 2005) establishes that the psychologist should not use his function to promote personal beliefs or spiritual practices, reaffirming the commitment to psychological science.

Professionals in the Psychology of Religion investigate religious behavior from multiple theoretical frameworks, recognizing its complexity. Each perspective illuminates specific dimensions of the individual's relationship with the sacred. Thus, the field integrates different

explanatory models to understand how beliefs, emotions, subjective experiences, and sociocultural influences are articulated in the formation and expression of religiosity.

3.2.1 Psychoanalysis

In Psychoanalysis, Freud (1856-1939) understands that religion has deep roots in the unconscious and is related to unresolved desires and conflicts, as well as psychic defense mechanisms. In works such as *The Future of an Illusion* (1927/2014) and *Totem and Taboo* (1913/1974), Freud argues that religion can function as a symbolic response to fundamental human anguish, especially related to the father figure.

3.2.2 Analytical Psychology

On the other hand, Carl Gustav Jung (1875-1961), precursor of Analytical Psychology, although he also recognizes the role of the unconscious, conceives religion as a legitimate expression of the human search for meaning and individuation. In *Psychology and Religion*, (Jung, 1938/2013), the author states that religious symbols can favor psychic development and help the individual to integrate conscious and unconscious aspects of the personality. Thus, unlike Freud, Jung attributes a potentially positive value to religious experience.

3.2.3 Existential-phenomenological

It understands the human being as a free being, in constant construction of meaning. Frankl, in his book *In Search of Meaning* (1946/2011), for example, highlights that the search for meaning is an essential factor of mental health, and that spirituality can play a relevant role in this process. In this approach, the psychologist investigates the meaning attributed by the person to their religious experience, analyzing how this meaning contributes to their existence, autonomy and suffering or psychological strengthening.

3.2.4 Cognitive Psychology

In Cognitive Psychology, the focus is on the mental processes that underpin religious beliefs and practices, such as memory, perception, judgment, and decision-making. Contemporary research has investigated how the brain processes experiences interpreted as spiritual and how cognitive biases contribute to the formation and maintenance of supernatural beliefs. As Machado and Zangari (2017) point out, this area seeks to understand the cognitive mechanisms that make possible the expression of religious behavior and its persistence in human experiences.

3.2.5 Developmental Psychology

In the field of Developmental Psychology, classic studies such as those by Piaget, *The Moral Judgment in the Child* (1932/1994), suggest that the understanding of the sacred accompanies cognitive development, varying according to the reasoning capacities that are structured in each phase of life. Later research expanded this idea, demonstrating that children and adolescents construct religious notions according to their symbolic, emotional, and social abilities. Thus, the psychologist can investigate how religious beliefs are understood and experienced depending on the individual's stage of development.

3.2.6 Health Psychology

Religion often appears as a coping resource in the face of illness. Research by Kenneth I. Pargament (1997) demonstrates that religious *coping* strategies can help some people cope with stressful situations, although they can also produce negative effects, depending on the way they are experienced. Thus, hospital psychologists often investigate whether religious practice contributes or hinders the process of emotional adaptation to illness.

3.2.7 Social Psychology

The interest lies in: how religious beliefs relate to culture, power, identity and group dynamics. Inspired by authors such as Durkheim, in his work *The Elementary Forms of Religious Life*, the research seeks to understand how religious practices are socially disseminated, how they influence values and behaviors, and how they shape community bonds. Machado and Zangari (2017) emphasize that religious adherence depends on multiple social and cultural factors, and not only on individual convictions.

In addition to theoretical approaches, practice in the Psychology of Religion is guided by strict ethical principles. The Federal Council of Psychology (CFP, 2005; 2012) establishes that the psychologist must guarantee dignity, freedom, integrity and respect for human rights, and it is expressly forbidden to induce religious, political or moral convictions. Therefore, psychological care must be secular, scientific and respectful of the diversity of beliefs. As Rosa (1971) states, the Psychology of Religion "is neither defense nor condemnation of religion", but scientific research.

In summary, the Psychology of Religion is a multidisciplinary field that seeks to understand the religious phenomenon through different theoretical approaches, maintaining its scientific and ethical commitment. Far from religious practices and without the objective of

validating or invalidating beliefs, she investigates how religious experiences, beliefs, and behaviors influence human development, mental health, and social relationships.

4 IMPLICATIONS OF RELIGIOSITY IN PSYCHOLOGY - POSITIVE AND NEGATIVE ASPECTS

Religiosity, as previously highlighted, constitutes a central element in the human experience, influencing not only the spiritual dimension, but also the ways of coexistence, symbolic elaboration and construction of meaning. In the field of psychology, it does not represent a marginal theme, but a phenomenon inseparable from the cultural, historical, and subjective dynamics that shape the individual's life (CFP, 2012). Thus, it is essential that the psychologist develops an ethical, sensitive and welcoming posture in the face of the religious beliefs brought by the client, recognizing them as a constitutive part of his identity and trajectory. The Code of Ethics states that it is not up to the psychologist to impose personal, religious or ideological values, but to ensure that uniqueness is respected, including moral, philosophical and sexual orientation convictions (CFP, 2012). This reinforces that understanding religiosity in the clinic requires openness, respect and critical analysis of the subjective meanings attributed to beliefs.

Religiosity consists of an organized system of beliefs, narratives, rituals, and values oriented to the sacred, providing the individual with an interpretive framework to understand the world, elaborate experiences, and deal with challenges and suffering (Koenig, McCullough & Larson, 2001). Dalgarrondo (2008) emphasizes that it articulates emotional, cognitive and social dimensions, influencing the way the subject perceives himself and positions himself in the world. Thus, it is not limited to formal practices, but constitutes a dynamic experience that integrates affections, meanings, community bonds and belonging.

The impact of religiosity extends beyond the spiritual sphere, influencing behaviors, choices, and coping strategies. The way beliefs are experienced, whether in a flexible and welcoming way, or rigid and punitive, determines the psychological impact. Silva and Goto (2021) reinforce that it is up to the psychologist to analyze both the subject's personal relationship with religiosity and the sociocultural context that shapes it. When integrated in a healthy way, it can be a resource for protection and psychological strengthening, offering rituals, symbolic narratives, a sense of belonging, and social support (Silva and Goto, 2021). Moreira-Almeida et al. (2006) show that religious beliefs can promote emotional stability, favor coping with crises and contribute to general well-being.

However, religiosity does not only produce positive effects. When associated with rigid, moralistic or punitive conceptions, it can intensify internal conflicts, generate feelings of

inadequacy and make it difficult to seek help. Interpretations that attribute suffering to moral failures, sin, or lack of faith fuel guilt, fear, and self-criticism (Silva and Goto, 2021). Moreira-Almeida et al. (2006) highlight this ambivalence: there are situations in which religiosity promotes adaptation and support, and others in which it becomes an obstacle to care, reinforcing stress, shame and resistance to treatment.

In the area of alcohol and other drug use, the literature shows that religiosity can act as a protective factor. The review by Campos and Rodrigues (2021) indicates that participation in religious practices and adherence to spiritual values are associated with self-discipline, strengthening of bonds, and moral norms that discourage risky behaviors. Religious communities function as spaces of welcome and emotional stability, reducing the likelihood of dysfunctional substance use (Campos & Rodrigues, 2021).

On the other hand, certain forms of religious experience can intensify emotional suffering. Stroppa and Moreira-Almeida (2008) observe that interpretations centered on fear and punishment increase guilt and helplessness, increasing vulnerability to depressive and anxious conditions. Negative spiritual beliefs, such as ideas of possession, curse, or spiritual attack, are associated with greater emotional vulnerability, intensifying fear, insecurity, and a sense of loss of control, which can aggravate anxiety and depression (Torlay, 2024).

Given this complexity, it is evident that the relationship between religiosity and mental health is not one-dimensional. Its effects depend on the sociocultural context, the type of belief, community support, interpretative flexibility and subjective experiences. Thus, the psychologist's work requires sensitivity, qualified listening and an expanded understanding of the meanings that religiosity assumes in the patient's life. According to Moreira-Almeida et al. (2006), recognizing the ambivalence of religiosity, capable of protecting, strengthening, but also making people sick, allows the subject to fully welcome and help him to integrate his spiritual dimension in a healthy and functional way, contributing to a broader, ethical psychological care that is sensitive to human realities.

5 FINAL CONSIDERATIONS

The present research allowed us to understand that religiosity and spirituality cross human life in a profound way, shaping perceptions, daily practices and ways of dealing with suffering. The theoretical analysis showed that these dimensions are not simple or homogeneous phenomena; they manifest themselves in a unique way in each person, with the potential for both care and illness, depending on how they are experienced and incorporated into daily life.

The results indicate that spirituality and religiosity, when lived in a flexible, welcoming and integrated way with subjectivity, favor emotional balance, a sense of belonging and internal strengthening. They function as coping resources, helping the individual to reorganize experiences in the face of adverse situations and contributing to the construction of meanings that sustain life even in moments of psychic vulnerability.

However, the study shows that these dimensions can become sources of suffering when marked by doctrinal rigidity, moral impositions or negative conceptions about human nature. In punitive or normative religious contexts, feelings of guilt, fear, and self-condemnation intensify, hindering emotional development and, in more severe cases, aggravating psychopathological conditions. In these cases, religiosity ceases to be support and acts as a destabilizing element, interfering with the search for professional help and adherence to treatments.

It is considered that the objectives of the research were achieved, allowing us to understand the double face of religiosity and spirituality in mental health: their ability to promote well-being and, simultaneously, to contribute to illness, depending on the practices and interpretations involved. However, the bibliographic nature of the study is a limit, as the absence of empirical data prevents comprehensive conclusions about different social groups, age groups and cultural contexts.

Despite this limitation, the study offers relevant contributions to contemporary psychology, reinforcing the importance of integrating the understanding of these phenomena into clinical practice and health promotion. Recognizing spirituality and religiosity as legitimate elements of the human experience expands the possibilities of care, especially when the psychologist dialogues with these experiences in an ethical, sensitive and non-dogmatic way.

In short, the need for new empirical and interdisciplinary studies becomes evident, exploring how different religious traditions, spiritual practices, and sociocultural contexts influence mental health. The deepening of this discussion can contribute to psychological interventions that are more sensitive to the multiple ways of living spirituality, promoting care that recognizes the complexity and uniqueness of each individual.

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