

The Interpersonal Whole Brain Model of Care™: Utilizing the Union of Science & Love to Meet the Needs of Neurodivergent Populations

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Abstract

The Interpersonal Whole Brain Model of Care™ (IWBMC™) addresses the increasing prevalence of neurodevelopmental disorders through an innovative blend of science and compassionate care. Developed by Amy O’Dell and applied at Jacob’s Ladder School, this model includes seven interconnected elements: Spirit & Will, Neurodevelopmental Methodology, Learning Style, Emotional-Relational-Behavioral Assessments, Physiological Factors, Social Structure, and Whole Person Integration. Rooted in interpersonal neurobiology and positive psychology, the IWBMC™ formulates personalized care plans within a therapeutic ecosystem anchored by hope, truth, and love, recognizing each client not merely as their diagnosis but as “a soul ready to be cared for.”

Keywords: neurodiversity, interpersonal neurobiology, whole-brain approach, therapeutic relationship, personalized intervention, neuroplasticity, neurodevelopmental disorders, holistic care

1. Understanding the Rise in Neurodiversity & the Challenges for the 21st Century

More attention has been drawn to the rise in neurodevelopmental disorder diagnoses over the past decade. Disorders like Attention Deficit Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD) have notably increased (Yang et al., 2023; Abdelnour, Jansen, & Gold, 2022). The prevalence of neurodevelopmental disorders, particularly ASD, has significantly increased, with current data from the Centers for Disease Control and Prevention indicating that 1 in 36 children are now diagnosed with ASD (Maenner, 2023). This change represents a striking 432% rise in ASD diagnoses over the past two decades. Neurodevelopmental disorders, including ASD, ADHD, and others, are complex conditions characterized by a diverse range of symptoms that vary significantly in nature and severity among individuals (Goldberg, 2023).

The interventions for neurodevelopmental disorders should be diverse to match the disorders’ diversity. However, few studies look at an integrated approach to intervention for neurodevelopmental disorders despite evidence suggesting its value (Siegel & Drulis, 2023). According to Siegel’s interpersonal neurobiology perspective, change occurs in relation to another person, making relational quality critical. Researchers also suggest that interventions combining multiple approaches can reduce symptoms of various neurodevelopmental disorders, including autism. Current research indicates that person-centered, humanistic, or positive psychological approaches are necessary (Chapman & Botha, 2023). In fact, co-creating treatments and interventions with neurodivergent individuals has been highly successful due to the established connections between families and providers (Schwartzman et al., 2024). These interventions can reduce negative social and emotional behaviors associated with these conditions (Kostopoulos et al., 2021).

Some researchers also suggest that since we have validated several interventions for neurodevelopmental

disorders, the next step is to develop individualized programming that utilizes several approaches at once rather than solely one approach (Hume et al., 2021). Specifically, Hume and colleagues state: “Practitioners [should] establish programs with strong program quality as a foundation, develop individualized and clearly articulated goals for children/youth, select and implement practices that may have different theoretical bases but also have demonstrated efficacy” (p. 4029). In essence, there is a need to develop programs that incorporate evidence-based practices and prioritize establishing solid client-provider relationships. These integrated programs and their outcomes for individuals with neurodevelopmental disorders should be rigorously studied to assess their effectiveness and potential for broader implementation. The Interpersonal Whole Brain Model of Care® (IWBMC™) seeks to harness evidence from existing practices to implement a model of care that meets the needs of neurodivergent individuals.

2. Outlining the IWBMC™

The Interpersonal Whole Brain Model of Care® is not just another therapeutic approach. It is a unique and innovative model founded on the principle of interconnectedness between body, mind, and soul (Siegel, 2023; Thompson, 2021). Founded by Amy O’Dell, the model recognizes that individuals have unique functional processes. It posits that despite differential or divergent developmental pathways, learning and change can occur when guided by trained, compassionate professionals. These concepts recognize that humans are inherently designed for connection, reflecting our neurological makeup. The model also posits that optimal brain function occurs when full connectivity is achieved, particularly between the left and right hemispheres. This holistic view of human functioning forms the cornerstone of the IWBMC™ approach — caring for the whole person.

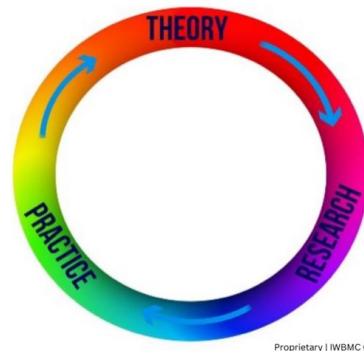


Figure 1. Theory, Research, Practice Wheel

The innovation of the IWBMC™ is currently embodied at the Jacob’s Ladder School and is intrinsically tied to the brain’s plasticity. Often, there is difficulty connecting theory to research and practice, although all are required to create successful interventions (see Figure 1). Few institutions genuinely align their beliefs with their practices seamlessly. O’Dell has successfully parsed the existing theory and research within educational neuroscience, developmental psychology, and cognitive psychology to develop the ideas and interventions grounding the IWBMC™. This seamless connection allows for delivering care that offers clients the best strategies.

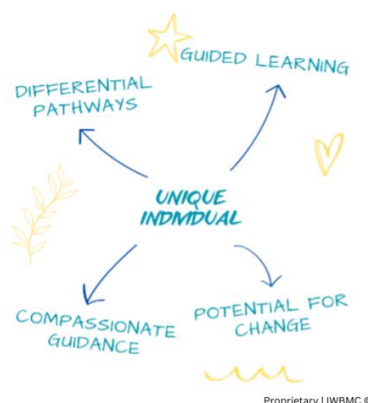


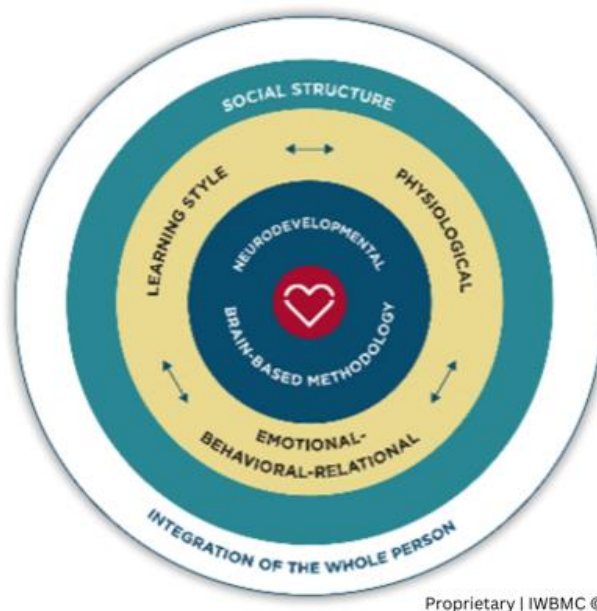
Figure 2. Understanding the Individual & the IWBMC™

In essence, the IWBMC™ embodies plasticity, mirroring the brain's adaptability. Acknowledging that science has demonstrated the brain's capacity for change, those working with clients whose brains developed along differential pathways or endured trauma must operate with a similarly flexible mindset. Each client is distinct, necessitating creativity and adaptability while maintaining a consistent care framework.

Within the IWBMC™, flexibility and creativity are not just abstract concepts. They are anchored by an unwavering commitment to service excellence and an unconditional love for every client. Providers and administrators hold steadfast hope for the families they engage with, believing in each client's potential for growth and improvement. O'Dell emphasizes the importance of adhering to each client's developed plan while remaining open to necessary adjustments. By looking beyond diagnoses and conventional approaches, providers expand their understanding of each client's unique potential, refusing to be limited by labels or traditional paradigms.

3. Components of the IWBMC™

A distinctive feature of the IWBMC™ is its innovative fusion of scientific understanding with the power of love, termed "the union of science and love." This integration acknowledges that effective healing and personal growth require empirical knowledge and deep emotional connection. The model recognizes that love, in its essence, is a form of connection and that our physiological and psychological systems are primed to seek and benefit from such connections. Within the IWBMC™ framework, establishing meaningful bonds is crucial for facilitating developmental progress and healing processes, simultaneously recognizing that all elements must be considered in relation to the others rather than viewed in isolation.



Proprietary | IWBMC ©

Figure 3. Diagram of the Interpersonal Whole-Brain Model of Care®

The Interpersonal Whole-Brain Model of Care® (IWBMC™) is the culmination of Amy O'Dell's three decades of work with individuals facing neurodevelopmental challenges. This comprehensive model integrates theory and evidence-based strategies to create personalized treatment plans. The IWBMC™, as illustrated in Figure 3, comprises seven key elements: Spirit & Will, Neurodevelopmental Brain-based Methodology, Learning Style, Emotional-Relational-Behavioral Assessments, Physiological, Social Structure, and Integration of the Whole Person. Each component is outlined below.

- 1) **Spirit & Will.** The core identity and functioning of the client are referred to as Spirit and Will in the model of care. According to O'Dell, this is the driving force for change and is considered the center of the model of care. If a client's spirit and will are crushed, the model must address this issue before proceeding with any other intervention. Research shows that spirit and will are crucial for change. Positive psychologist Martin Seligman emphasized the significance of learned hopelessness in hindering achievement (1972). When someone experiences constant failure, they start seeing themselves as a failure, and failure becomes their identity. Susan Harter's work on self-concept supports Seligman's theory, indicating that self-esteem and efficacy are connected to feelings of accomplishment (2008).

When many clients come to Jacob's Ladder School, they (and their families) feel defeated because they have had many negative experiences. However, Jacob's Ladder uses the IWBMC™ to shift perspective and provide hope for clients. In that way, the model of care seeks to build on each client's strengths while also developing the client's spirit and will. Every client is unique, so everyone has their own spirit and will. As such, the interventions are targeted not just to meet root problems but also to accommodate and address the nature of the individual — their personality, motivations, and characteristics.

- 2) **Neurodevelopmental.** The second component of the IWBMC™ involves using a neurodevelopmental methodology to understand and treat clients. As mentioned earlier, a person is made up of a mind, body, and soul. Therefore, it is crucial to understand the brain and its functioning in order to help improve the functioning of our clients with neurodevelopmental disorders. O'Dell emphasizes the importance of determining the under and over-connectivity of neural networks in clients' brains, which is a unique aspect of this methodology. This part of the IWBMC™ focuses on testing clients using the QEEG and a set of assessments covering everything from interhemispheric communication to vestibular functioning and sensory processing. The underlying idea is that the brain is plastic and flexible, and in order to understand each client's unique challenges, it is necessary to have a comprehensive understanding of their brain processing.
- 3) **Learning Style:** Learning style is crucial in tailoring interventions to each client. Clients' learning styles are assessed to uncover potential challenges and strengths. This assessment provides invaluable insights into how clients process and retain new information, what drives their achievement motivation, and the intricacies of their learning processes. In addition, cognitive aspects are evaluated, including sequential processing and working memory levels. By understanding a client's unique learning style, academic readiness, abilities, and level of independence, we craft genuinely personalized intervention plans. This approach ensures that new information is presented in a way that resonates with the client, maximizing retention and fostering a sense of accomplishment.

The interventions are designed to adapt to these individual learning styles, creating an environment where clients can thrive. Whether a client learns best through visual aids, hands-on experiences, or abstract concepts, we incorporate these preferences into our strategies. This tailored approach enhances learning outcomes and boosts the client's confidence and engagement in the learning process.

- 4) **Physiological:** Recently, we have gained a deeper appreciation for how nutrition and other physiological elements impact our overall well-being (Bray, 2019). Sleep and cardiovascular health have emerged as crucial factors in growth and development. It has become increasingly clear that physiological health, brain development, and functioning are an intricate connection. At Jacob's Ladder, we recognize the importance of understanding each client's unique physiological needs. This includes their diet, exercise routines, medication requirements, and how these factors influence their brain processing and development.

This holistic approach allows for developing intervention plans that address the clients' cognitive needs and the fundamental physiological foundations that support optimal brain function. This comprehensive strategy ensures that we nurture body and mind, setting the stage for more effective and lasting progress in our clients' development.

- 5) **Emotional-Behavioral-Relational:** One of the most critical components of this model is the recognition of a client's emotional, behavioral, and relational strengths and challenges. Approaches to learning, interaction with others, and overall mindset can be linked to a client's emotional, behavioral, and relational strengths and areas for improvement. Incorporating strengths into client programming helps establish a positive therapeutic relationship between the client and the provider. Additionally, O'Dell has developed the IWBMC™ Trauma Support Model that acknowledges the trauma histories of clients and seeks to address those issues as part of the overall plan for the client.
- 6) **Social Structure:** The client's external support systems can be critical to understanding how they move through their programming. Learning does not stop when the client's day finishes. External social support systems are needed to partner with Jacob's Ladder to reinforce learning at home. In addition, occupational therapists, physical therapists, or speech-language pathologists may be working with a client on a particular behavior or way of functioning within and outside of regular clinical hours to support families. There are external influences on our lives and development. The social support here is internal (through our providers) and external (through our work with families). However, the strength of the work at JL is in creating a community of hope. This interdependence is critical to understanding how to support clients as they move through the programs. Daniel Siegel calls it "interpersonal neurobiology" (2022, p. 61). We are connected

through our neurobiological core, and this is a strength that allows us to support our clients. Both Hannaford's work and Jacob's Ladder's approach are grounded in caring for the whole person within a community context. Hannaford references the African concept of ubuntu: "Because I am, we are; and because we are, I am" (2007, p. 229), highlighting the power of interconnectedness in fostering belonging and finding solutions.

- 7) **Integration of the Whole Person:** The methodology prioritizes a whole-person and whole-brain approach to foster integration. O'Dell characterizes this as a "whole-person, whole-brain" approach, acknowledging that human development does not occur in isolation. Instead, it is influenced by various biological and environmental factors. The IWBMC™ embraces this perspective, aiming to develop an action plan that addresses the client's biological makeup (including spirit and will, neurobiology, physiological states, and cognitive deficits) and their environmental support systems.

At its core, the model is facilitated by a trained, empathetic provider who strives to create an optimal environment for growth and learning. This approach recognizes the complex interplay between an individual's internal characteristics and their external surroundings, offering a holistic framework for addressing neurodevelopmental challenges.

Considering biological and environmental factors, the IWBMC™ provides a comprehensive strategy for supporting individuals with neurodevelopmental differences. This model represents a significant step forward in personalizing care and maximizing potential for growth and development.

4. Theoretical Depth and Practical Application

The Interpersonal Whole-Brain Model of Care® is based on interconnected theoretical principles, with relationship and connection as crucial aspects. Recent literature has extensively explored the impact of the therapeutic relationship with individuals, noting the critical role of establishing a connection with clients (see Siegel, Schore, & Cozolino, 2021; Gilbert, 2009). Both Siegel and Gilbert discuss the importance of understanding the intersubjectivity of therapeutic work and emphasize that change is made by establishing a safe, compassionate relationship with the client. The IWBMC™, with the underlying approach of hope, truth, and love, draws on these theoretical concepts to establish a safe environment for clients, reducing shame that may have been associated with their previous environment and offering a space for clients to grow and change. This empathetic relationship allows providers to adjust strategies as they work with clients to meet immediate needs and ensure that clients are working at their challenge point.

Each element of the IWBMC™ is grounded in broader psychological and neuroscientific principles and evidence-based practices. The model's emphasis on spirit and will draws support from Susan Harter's theories on self-esteem, efficacy, and sense of belonging (2008). Harter posits that this approach aligns with the fundamental human need for belonging, further reinforced by Martin Seligman's theories of positive psychology and health (1999, 2008). Seligman also introduces the notion of a strengths-based approach rather than a deficit-driven approach. While the IWBMC™ assesses for areas of deficiency, the model builds on the strengths of the individual's spirit, will, and learning styles to help drive change.

Additionally, Angela Duckworth's concept of grit (2007) and Carol Dweck's (2006) work on growth mindset contribute to this model aspect that speaks to the notion that effort and hard work can drive change. The client and the provider embrace growth mindsets and demonstrate grit throughout the process. This means they consistently put forth effort in the learning processes and interventions. The shared commitment to perseverance is crucial, enabling both parties to navigate challenges, maintain motivation, and work towards continuous improvement. This approach recognizes that progress often requires sustained effort and resilience from both the client and the provider, creating a collaborative environment conducive to meaningful growth and development.

The neurodevelopmental perspective of the IWBMC™ is rooted in the work of Daniel Siegel (2021) and Carla Hannaford (1995). This component is also central to Uri Bronfenbrenner's (1979) ecological systems theory, which supports the IWBMC™'s strategy of connecting the work done at the neurodevelopmental center with providers to create wraparound services involving parents. O'Dell notes that the work is grounded in scientific principles. Still, clients need their providers and the support of their families since the learning process flows between home and school.

The IWBMC™'s approach to understanding learning styles is informed by Howard Gardner's theories of intelligence and schooling (2011), Vygotsky's sociocultural theories (1978), which emphasize the importance of a teacher or guide, and Bruner's idea of scaffolding the learning process (1976). These frameworks help tailor interventions to individual cognitive strengths and preferences.

Recognizing physiological challenges within the IWBMC™ draws on research in sensory integration and points again to work in interpersonal neurobiology, acknowledging the profound impact of physical states on cognitive

and emotional functioning (Hannaford, 1995). The model's attention to emotional and behavioral challenges is supported by theories of emotional intelligence and regulation and cognitive-behavioral approaches to managing behavior (Goleman, 1995).

5. Grounding the IWBMC™: The Importance of Hope, Truth, Love

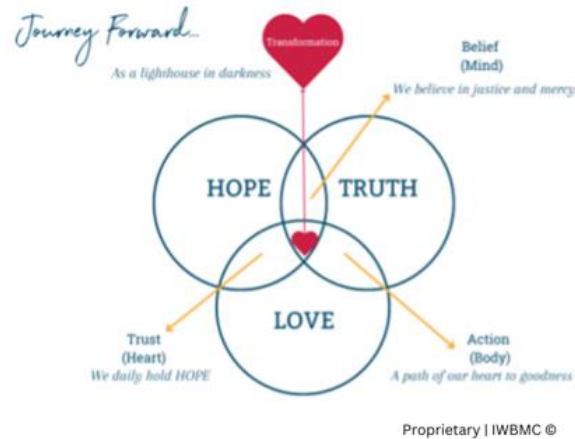


Figure 4. The Hope, Truth, Love Model

The IWBMC™ is bound by the principles of truth, hope, and love (see Figure 4). Those implementing the model **maintain honesty (truth) about their clients' limitations and capabilities, avoiding overpromising**. A key focus is working with clients based on a plan developed through careful attention to evidence from thorough testing. As O'Dell states, the process creates a unique "neurological fingerprint" for the client. This *thumbprint*, once identified, leads to a comprehensive therapeutic educational plan, considering each unique aspect of the individual. While the truth of the situation is presented to families, **the plan embodies the hope that change—even incremental—is possible**. Binding this together is a **sacrificial love experienced through the therapeutic relationship**.

From a neurological standpoint alone, over- and under-connectivity patterns in the brain dictate much of a person's social, emotional, and cognitive output. Identifying these patterns as one aspect of over 1,300 variables leads to a nonrepeatable way forward through challenges—whether they be emotional, behavioral, learning challenges and differences, or rehabilitative from an event or rare genetic syndrome.

The IWBMC™ develops individualized plans incorporating varied interventions—from movement to whole-word language models to counseling. The model is based on the belief that every child has the innate desire to learn and to do well. Through wraparound services, dedicated providers build rapport with clients and their support network (e.g., family and caregivers) to support each individual's plan. The principle of hope drives the development of interventions specified for each learner. This comprehensive and personalized approach aims to address each client's unique needs, fostering an environment where growth and progress are not just possible but expected.

The IWBMC™ places significant emphasis on environmental factors in therapeutic and developmental contexts. Great care is taken to create a nurturing, secure community atmosphere that mirrors ideal early developmental conditions. This approach extends beyond client care to comprehensive staff training, fostering a culture that fully embodies the principles of the IWBMC™. Central to this culture is the commitment to authentic interactions at all levels. Every community aspect—from decision-making processes to interpersonal communications—is meticulously aligned to build a supportive and growth-oriented environment.

6. Creating a Therapeutic Ecosystem

Within the IWBMC™ framework, truthfulness is considered essential for developing genuine connections. The therapeutic environment at Jacob's Ladder is designed to encourage honesty, vulnerability, and sincere engagement among all community members. This focus on authenticity, which deeply values and respects each individual's unique journey, creates a safe and nurturing space conducive to personal growth, healing, and transformation—all key objectives of the IWBMC™.

The model is built upon three interconnected core principles: hope, truth, and love. These elements have broad

applications extending far beyond the immediate therapeutic context, influencing every aspect of the Jacob's Ladder community. By integrating these principles, the IWBMC™ creates a comprehensive approach to community building that supports clients' development and nurtures staff members' growth and well-being. The result is a dynamic, symbiotic ecosystem where mutual growth and care are continually fostered, embodying the holistic spirit of the IWBMC™ and setting a new standard for therapeutic interventions.

The IWBMC™ was developed to understand how clients learn, aiming to eliminate barriers to success. All individuals should be treated with respect and dignity in their learning journey. A client is not their diagnosis. They are a soul ready to be cared for. The lens of the IWBMC™ expects clients to see their full potential through their loving environment—whatever that may be for that individual.

7. Innovation and Continuous Evolution

The IWBMC™ is not a static model but a dynamic, evolving approach. O'Dell's vision encourages ongoing research and innovation. This might involve collaborations with universities, participation in neuroscience studies, or the development of new therapeutic technologies. The model's flexibility allows for the rapid integration of new findings and techniques, ensuring that clients always benefit from the most current and effective interventions.

In conclusion, the IWBMC™ represents a holistic, scientifically grounded, and deeply compassionate approach to therapeutic care. Its comprehensive nature, grounding in neuroplasticity, and emphasis on individualized, whole-person care set a new standard in the field of neurodevelopmental therapy and education. Through its implementation at Jacob's Ladder and beyond, the IWBMC™ continues to evolve, pushing the boundaries of what is possible in therapeutic interventions and offering hope and transformation to individuals and families facing neurodevelopmental challenges.

Disclaimer: The use of the IWBMC™ does not substitute the expertise of physical, speech, or occupational therapists (or other related specialties). Instead, it incorporates elements emphasizing whole-brain health and stimulation, continuous development, adaptive fitness, nutrition, and educational achievement. We strongly advocate collaboration with other professionals to deliver comprehensive care for individuals with unique needs.

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