Implementing Augmentative and Alternative Communication (AAC) for Adults with Intellectual Disability: Challenges, Strategies, and Quality-of-Life Outcomes

Ibtissem El Hassani
University of Algiers 2 (Algeria), ibtissem.elhassani@univ-alger2.dz

Receipt date : 24/02/2026 ; Acceptance Date: 22/05/2026

Abstract:

Augmentative and Alternative Communication (AAC) encompasses a range of tools and strategies designed to supplement or replace speech in order to support functional communication in individuals with language limitations. While AAC has been extensively documented in pediatric populations, its implementation among adults with intellectual disability remains comparatively underexplored and inconsistently applied in real-life contexts.

This critical review examines the main challenges associated with AAC implementation in adulthood, including organizational constraints, communication partner factors, and individual characteristics. It also analyzes key implementation strategies, such as structured partner training, progressive system adaptation, cross-setting consistency, and communication accessibility within adult services. Particular attention is paid to the impact of AAC on core dimensions of quality of life, including self-determination, social participation, emotional well-being, and access to healthcare.

Available evidence indicates that AAC may enhance autonomous choice-making, communicative initiation, and meaningful participation, while contributing to the reduction of certain challenging behaviors when environmental supports are adequately established. However, outcomes appear closely dependent on implementation quality, contextual coherence, and continuity of support.

Practical recommendations are proposed to promote sustainable integration of AAC within adult care pathways and living environments, emphasizing personalized, collaborative, and context-sensitive approaches.

Keywords: intellectual disability; augmentative and alternative communication; adults; communication partners; implementation;

1 - Introduction

Intellectual disability is defined by the American Association on Intellectual and Developmental Disabilities (AAIDD) as significant limitations in intellectual functioning and adaptive behavior, originating during the developmental period. It represents a major public health concern. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), these limitations affect conceptual, social, and practical domains, with direct consequences for functional autonomy, access to learning opportunities, and social and community participation.

Although support and intervention approaches for individuals with intellectual disability have advanced considerably over recent decades, communication remains one of the most persistent challenges, particularly in adulthood. Communication plays a central role in autonomy and social inclusion. It underpins the ability to express needs, make choices, establish social relationships, access healthcare and social services, and participate meaningfully in community life.

However, many adults with intellectual disability experience significant communication difficulties—whether expressive, receptive, or pragmatic in nature. These challenges are often compounded by cognitive limitations, co-occurring conditions (including sensory, motor, or neurodevelopmental disorders), and environments that are insufficiently responsive or accessible. As a result, individuals may become increasingly dependent on caregivers, face reduced opportunities for interaction, and encounter barriers to full social inclusion.

Within this context, Augmentative and Alternative Communication (AAC), defined by the American Speech-Language-Hearing Association as a range of modalities designed to supplement or replace natural speech, emerges as an innovative and increasingly recognized approach. AAC encompasses a broad spectrum of strategies, from low-tech supports—such as visual aids, gestures, pictograms, communication boards, and tangible objects of reference—to more advanced technological solutions, including mobile applications, tablet-based systems, and speech-generating devices. The primary aim of these tools is to support functional communication in real-life contexts, enabling individuals to express a variety of communicative intentions (e.g., requesting, refusing, commenting, narrating, and engaging socially), while also facilitating comprehension and participation.

Although AAC has been widely studied and progressively integrated into pediatric interventions—particularly for children with autism spectrum disorder or intellectual disability—its implementation among adults, and especially adults with intellectual disability, remains insufficiently explored.

This gap is particularly concerning given that adulthood is characterized by major life transitions, including the end of formal schooling, entry into vocational settings, changes in residential arrangements, and the aging of family caregivers. These transitions may place previously acquired communication skills at risk and increase the need for structured and sustained support. Furthermore, continuity of services, systematic training of communication partners, and adaptation of living environments represent specific challenges that directly influence the effectiveness and long-term sustainability of AAC interventions.

The objective of this article is to analyze, through a critical review of the literature, the challenges, implementation strategies, and quality-of-life outcomes associated with AAC use among adults with intellectual disability. More specifically, the review examines the extent to which AAC may contribute to improvements in functional communication, autonomy, and social participation, while identifying organizational, relational, and technological barriers that may hinder its adoption. The article also proposes practical recommendations aimed at optimizing the integration of AAC into adult care pathways and living environments, within a broader framework of inclusion and quality-of-life promotion.

This contribution is based on a critical literature review focusing on the implementation of Augmentative and Alternative Communication (AAC) for adults with intellectual disability. The literature search was conducted across major international databases (e.g., PubMed, Scopus, PsycINFO, and ERIC) and was supplemented by manual screening of reference lists from key articles. Search terms combined concepts related to intellectual disability ("intellectual disability," "developmental disability"), AAC ("augmentative and alternative communication," "AAC"), adulthood ("adult*"), implementation dimensions ("implementation," "training," "communication partners," "service delivery"), and outcomes ("quality of life," "participation," "self-determination").

Studies were included if they explicitly addressed: (1) adults (≥18 years) with intellectual disability (with or without comorbid conditions); (2) the use or implementation of AAC systems (low-tech and/or high-tech); and/or (3) outcomes related to functional indicators such as communication, participation, behavior, access to healthcare, or quality of life. Studies exclusively focused on childhood were excluded, unless they provided findings directly relevant to transitions into adulthood. The synthesis adopted a thematic approach, structured around implementation barriers (organizational, partner-related, and individual), implementation strategies, and quality-of-life outcomes.

2- Epidemiology

The global prevalence of intellectual disability is estimated to range between 1% and 3% of the general population (Harris, 2006), with a male predominance observed across the lifespan. Among adults, the female-to-male

ratio ranges from 0.7:1 to 0.9:1, whereas in children and adolescents it varies from 0.4:1 to 1:1.

Prevalence rates vary considerably according to national income levels. Higher estimates are generally reported in low- and middle-income countries, where prevalence appears to be approximately twice that observed in high-income countries (Maulik et al., 2011). These differences may reflect variations in etiological factors—such as perinatal complications, infectious diseases, and malnutrition—as well as disparities in access to healthcare, early screening, and preventive services.

In Europe, prevalence estimates vary considerably and are generally situated around 1%, depending on methodological criteria and sampling procedures (Maulik et al., 2011). In Asia, estimates range from 0.06% to 1.3% (Jeevanandam, 2009). In China, a national survey conducted in 2006 reported a prevalence of 0.75%, with lower rates in urban areas (0.4%) compared to rural areas (1.02%) (Kwok et al., 2011).

These international variations should be interpreted cautiously, as prevalence estimates are highly dependent on diagnostic criteria, sampling procedures, and structural inequalities related to prevention, perinatal care, and the management of neurodevelopmental disorders.

3- Communication and Intellectual Disability in Adulthood: A Persistent Research and Practice Gap

Communication is a central determinant of autonomy, social inclusion, and quality of life for adults with intellectual disability. Within this population, cognitive and adaptive limitations are frequently accompanied by significant difficulties in both expressive and receptive language, whether spoken or written, with direct implications for employment, social participation, and access to services.

In a national cross-sectional study involving 601 adults aged 40 years and older with intellectual disability, 57.9% of participants presented communication difficulties, including 23.5% with severe impairments. These difficulties were significantly associated with lower levels of social participation, the presence of challenging behaviors, and certain comorbid conditions (Smith et al., 2020).

Communication disorders in adulthood also have substantial emotional and behavioral consequences. The inability to express needs or emotions clearly has been linked to increased distress and the emergence of challenging behaviors, such as aggression, oppositional conduct, or social withdrawal. From a functional perspective, such behaviors may represent alternative forms of communication when expressive means are limited (Carr et al., 1994; Durand & Merges, 2001).

Despite the centrality of communication to adult functioning, research and intervention efforts have disproportionately focused on childhood populations. As a result, adulthood remains comparatively underexamined, particularly with regard to structured communication supports. This imbalance creates a significant gap between identified needs and available services. In this context, the implementation of Augmentative and Alternative Communication (AAC) emerges not merely as a complementary intervention, but as a necessary framework for promoting communicative autonomy, reducing secondary behavioral difficulties, and supporting sustained participation across adult life settings.

The literature underscores the importance of tailored interventions to support both the development and maintenance of communication skills in adults with intellectual disability. Such interventions may include oral language stimulation, the teaching of compensatory strategies, and the use of alternative means of communication, particularly AAC (Beukelman & Light, 2020). However, despite their recognized clinical relevance, these interventions remain insufficiently systematized in adult services. Research efforts continue to focus predominantly on children and adolescents, even though communication needs persist—and in many cases intensify—during adulthood due to increasing social, vocational, and decision-making demands.

This imbalance highlights the urgent need for structured, sustainable, and context-sensitive support systems capable of promoting functional communication in real-life environments. Interventions must not only target skill acquisition but also ensure maintenance, generalization, and long-term accessibility across adult living contexts.

Within this framework, Augmentative and Alternative Communication (AAC) emerges as a particularly relevant clinical and environmental response. By compensating for expressive and receptive limitations while simultaneously fostering meaningful participation, AAC offers a structured pathway toward enhanced communicative autonomy and social inclusion in adult settings.

4- AAC in Adulthood: Recognized Potential but Fragile Implementation

Augmentative and Alternative Communication (AAC) is widely recognized as a promising approach to addressing the complex communication needs of individuals with intellectual disability, including in adulthood. In the literature, AAC is described not merely as a set of technical tools or symbolic systems, but as an integrated practice aimed at supporting functional communication within authentic life contexts (Beukelman & Light, 2020). Its scope extends beyond message transmission to encompass participation, autonomy, and environmental adaptation.

Despite growing professional and academic interest, empirical research specifically examining AAC use and implementation among adults with

intellectual disability remains fragmented. Much of the available literature consists of descriptive or qualitative studies, with comparatively limited large-scale or longitudinal investigations. This methodological imbalance constrains the development of evidence-based service models tailored to adult populations.

For example, a systematic review focusing on the experiences of communication partners working with adults with severe or profound intellectual disability found that, although AAC was widely acknowledged as an appropriate and necessary support, its implementation was rarely consistent or sustained across healthcare and community settings (Andzik & Chung, 2022). Reported barriers included insufficient staff training, high turnover in support personnel, limited institutional commitment, and the absence of structured follow-up mechanisms.

These findings suggest that the challenge is no longer to establish the theoretical relevance of AAC, but rather to ensure its effective, coordinated, and enduring implementation in adult services. Without systemic support and environmental adaptation, AAC risks remaining an underutilized resource despite its documented potential.

This situation is particularly concerning, as adulthood is characterized by increased communicative demands—such as employment-related interactions, administrative procedures, and healthcare decision-making—alongside a heightened reliance on communication partners. These partners—whether family members, educators, or healthcare professionals—play a central role in identifying the adult's needs, adapting communication tools, and mediating interactions.

However, the literature highlights persistent ambiguities regarding role responsibilities, insufficient specialized training, and organizational constraints (e.g., time limitations, institutional priorities, workload pressures) that significantly restrict the consistent use of AAC strategies in everyday contexts (Hanley et al., 2023). These findings suggest that the difficulties observed are less attributable to the AAC systems themselves than to the concrete conditions under which they are implemented.

Indeed, even when AAC supports are available, their sustained adoption is frequently hindered by environmental and relational barriers rather than technical limitations. In the absence of shared commitment among communication partners, AAC use may become confined to "crisis" or urgent situations rather than being integrated into routine, functional communication opportunities. Such restricted implementation ultimately limits its potential impact on social participation and long-term communicative autonomy in adulthood.

At the same time, other studies indicate that the effectiveness of AAC interventions in adulthood depends less on the specific system selected than on the conditions under which it is implemented: genuine accessibility within everyday environments, ongoing vocabulary adaptation, institutional support, and

consistency of practices across the individual's different life settings (Light & McNaughton, 2012). These findings suggest that, although AAC is conceptually recognized as a lever for improving communication, autonomy, and social inclusion among adults with intellectual disability, its actual impact relies primarily on the quality of contextual support that accompanies its use.

Accordingly, the central challenge lies not merely in introducing a technological or symbolic tool, but in developing a sustainable and shared communication system. Contextual factors—such as systematic training of communication partners, service organization, continuity of supports, and the active involvement of individuals themselves—appear to be as decisive as technological choices in ensuring meaningful and enduring use. From this perspective, it becomes essential to move beyond an exclusively tool-centered approach and instead examine the conditions that facilitate successful implementation and their broader implications for quality of life.

This issue aligns closely with contemporary models of quality of life in intellectual disability, which place self-determination, social participation, and the exercise of rights at the core of intervention frameworks (Schalock & Verdugo, 2002).

5- Specific Considerations in Intellectual Disability During Adulthood

Adulthood represents a particularly sensitive period for individuals with intellectual disability. While limitations in intellectual and adaptive functioning persist beyond childhood, environmental and social expectations evolve considerably (AAIDD, 2010; Schalock et al., 2010). Unlike childhood, which is often structured within relatively stable educational and medico-educational systems, the transition into adulthood is frequently marked by disruptions in service continuity, particularly following exit from the school system (McConkey & Collins, 2010).

In many contexts, specialized services for adults remain less structured and less intensive than those available during childhood. This reduction in formalized support may compromise previously acquired adaptive and communicative skills (Emerson & Baines, 2011). Consequently, adults with intellectual disability often navigate environments in which communication support depends more heavily on the initiative and responsiveness of communication partners than on structured intervention programs.

Such shifts place increased demands on functional communication abilities at precisely the moment when systematic supports may be declining. This imbalance may contribute to reduced participation opportunities and heightened vulnerability to social exclusion, particularly when communication needs are insufficiently addressed within adult service systems.

Furthermore, adulthood entails increased expectations regarding self-determination and social participation. The ability to express choices related to healthcare, housing, employment, or intimate life constitutes a fundamental right, as affirmed in the United Nations Convention on the Rights of Persons with Disabilities (UN, 2006). However, communication limitations may restrict the effective exercise of these rights and reinforce decision-making dependence (Wehmeyer, 2005).

From a health perspective, adults with intellectual disability exhibit a higher prevalence of both somatic and psychiatric comorbidities compared to the general population (Emerson & Baines, 2011; WHO, 2011). Difficulties in expressing symptoms and understanding medical information may compromise access to appropriate healthcare and reduce the quality of clinical interactions (Iacono et al., 2014).

Family support also remains central during adulthood, particularly in contexts where community-based services are limited. The aging of family caregivers represents an additional vulnerability factor that may threaten the stability and continuity of support systems (Chou, 2009). Institutional or residential environments, for their part, are often characterized by staff turnover and heterogeneous levels of professional training, both of which directly influence the quality and consistency of communicative interactions.

Taken together, these specific characteristics underscore the critical importance of implementing Augmentative and Alternative Communication in adulthood. In this life stage, communication functions not merely as a means of expression, but as a central mechanism for promoting self-determination, participation, and overall quality of life (Schalock & Verdugo, 2002).

6- Specificities of the Maghreb Context: An Under-Documented Field

In Maghreb countries, research specifically addressing Augmentative and Alternative Communication (AAC) implementation among adults with intellectual disability remains relatively limited in indexed international literature. While studies on intellectual disability are available, they predominantly focus on childhood populations, with comparatively less attention devoted to adult services, communication accessibility, and transition processes. This imbalance restricts a comprehensive understanding of long-term communication support needs in adulthood.

Specialized support services for adults demonstrate considerable heterogeneity across regions, with a strong presence of associative and non-governmental structures and variable access to professionals trained in speech-language therapy and AAC. In the absence of systematically documented institutional protocols addressing communication accessibility, AAC use may

depend more on individual initiatives than on structured service delivery frameworks.

In Algeria, medico-educational centers and specialized associations provide support to adults with intellectual disability; however, empirical documentation of structured AAC implementation within adult services remains scarce in peer-reviewed indexed publications. This limited visibility in international databases does not necessarily indicate the absence of practice, but rather highlights the need for systematic research and dissemination.

Several structural factors may influence AAC implementation in these contexts, including unequal access to high-tech assistive technologies, territorial disparities between urban and rural areas, a substantial reliance on informal family support, heterogeneous professional training pathways, and limited policy frameworks explicitly addressing adult communication accessibility.

International reports (WHO, 2011; UN, 2006) indicate that middle-income countries often face inequalities in access to assistive technologies and specialized services. These structural constraints suggest that AAC implementation in the Maghreb cannot be conceptualized solely as a technological matter, but must be embedded within broader socio-cultural and institutional realities.

Accordingly, implementation strategies may prioritize low-tech communication supports, progressive partner training, interdisciplinary coordination, and integration of communication accessibility within routine service protocols. From this perspective, the Maghreb context should not be viewed merely as resource-constrained, but as a meaningful setting for developing graduated, pragmatic, and culturally responsive AAC implementation models.

7- Barriers to AAC Implementation in Adults with Intellectual Disability

7.1- Organizational Barriers

The implementation of Augmentative and Alternative Communication (AAC) in adults with intellectual disability does not depend solely on individual characteristics or the availability of communication tools. Organizational factors constitute a major determinant of the effective and sustained use of AAC systems.

Several studies indicate that in residential and community-based settings, the absence of formal institutional protocols addressing communication accessibility limits the systematic integration of AAC into daily practices (Danker et al., 2023). When the use of communication supports relies exclusively on the initiative of a single professional or family member, implementation tends to become irregular and context-dependent rather than embedded within a coordinated service strategy.

Staff turnover represents a recurrent obstacle. Frequent changes in support personnel may disrupt continuity of practices and weaken previously established communication routines, particularly for adults with severe or profound intellectual disability (Hanley et al., 2023). The lack of structured handover procedures documenting an individual's preferred communication modalities further increases this risk.

More broadly, competing institutional priorities, limited time allocation for individualized communication support, and insufficient managerial commitment may restrict opportunities for consistent AAC use. In such contexts, communication support risks being perceived as an optional or supplementary practice rather than as a core component of service provision.

In addition, the lack of specialized training for professionals and communication partners is consistently identified as a major barrier to effective AAC implementation. Studies indicate that, without appropriate training, communication supports may be underutilized or diverted from their intended function (Danker et al., 2023). In such cases, AAC may be perceived as an auxiliary tool rather than as a central means of participation and engagement.

Time constraints and institutional priorities also shape the use of AAC systems. In environments where organizational goals are primarily focused on behavioral management or functional independence, communication support may be implicitly relegated to a secondary role (Chew et al., 2009). This implicit hierarchy of priorities can reduce opportunities for authentic communicative interactions and limit the development of meaningful exchanges.

In resource-limited contexts, particularly in certain middle-income countries, organizational barriers may be further compounded by insufficient access to specialized materials, restricted availability of assistive technologies, and the absence of explicit public policies addressing communication accessibility (WHO, 2011). Under such circumstances, AAC implementation often depends on individual or associative initiatives rather than being supported by structured institutional policies.

Overall, organizational barriers do not stem from intrinsic inadequacies of AAC systems themselves, but from a lack of systemic integration within service practices. The effectiveness of AAC in adulthood appears closely linked to the capacity of institutions to formalize communication protocols, ensure continuity of support, and provide structured training for communication partners.

7.2- Partner-Related Barriers

Beyond organizational constraints, the effective implementation of Augmentative and Alternative Communication (AAC) in adults with intellectual disability depends closely on communication partners. Family members, special

educators, caregivers, and healthcare professionals play a central role in activating, mediating, and regulating communicative exchanges.

Research examining the experiences of communication partners indicates that many encounter difficulties integrating AAC into everyday interactions, particularly due to insufficient training or a lack of confidence in using communication supports (Hanley et al., 2023). Limited technical or interactional competencies may result in restricted use of AAC systems or, in some cases, their gradual abandonment.

Attitudes and underlying beliefs may also constitute implicit barriers to implementation. When partners perceive the individual as unable to participate meaningfully in exchanges, or when communication is viewed as secondary to other priorities, opportunities for interaction tend to decrease (Danker et al., 2023). This dynamic may reinforce unidirectional communication patterns focused primarily on immediate needs, rather than supporting more elaborated and reciprocal exchanges.

Another barrier identified in the literature concerns the tendency to anticipate or interpret the individual's intentions without explicitly engaging AAC supports. Communication partners—particularly those who are highly familiar with the adult—may respond to presumed needs without encouraging independent expression. While this approach may appear efficient in the short term, it reduces opportunities for autonomous communication and may hinder the development of sustainable functional communication over time (Hanley et al., 2023).

Emotional constraints should not be underestimated. Supporting an adult with severe or profound intellectual disability may generate fatigue, frustration, or feelings of helplessness, all of which can influence the quality of communicative interactions. In such contexts, AAC use requires sustained and active engagement—an effort that may be difficult to maintain in the absence of institutional support and structured supervision.

Moreover, the heterogeneity of communication partners—in terms of training, professional experience, and role stability—may lead to inconsistent practices. A lack of coherence across different living environments (home, residential services, healthcare settings) limits the generalization of communication gains and weakens the sustainability of AAC implementation.

Thus, partner-related barriers cannot be reduced to a simple deficit in technical competence. Rather, they reflect a constellation of interactional, attitudinal, and contextual factors that shape communicative exchanges. Successful AAC implementation in adulthood therefore requires tailored training, ongoing professional support, and explicit recognition of the active role played by communication partners within the communicative process.

7.3- Individual-Level Barriers

While organizational and interactional factors play a decisive role in AAC implementation, the individual characteristics of adults with intellectual disability also influence the use and effectiveness of communication systems.

Adults with severe or profound intellectual disability may present significant cognitive limitations affecting attention, working memory, and abstract reasoning, which can complicate the acquisition and generalization of complex symbolic systems (Danker et al., 2023). Understanding the relationship between a symbol and its referent may require prolonged support, repeated exposure, and individualized adaptations tailored to the person's cognitive profile.

Co-occurring conditions represent an additional challenge. Sensory impairments (e.g., visual or hearing deficits), motor difficulties (e.g., limited pointing abilities, dyspraxia), or neurological conditions may restrict physical or perceptual access to AAC supports. Likewise, the presence of behavioral disorders or psychiatric conditions may affect interactional availability and emotional regulation, thereby reducing the frequency and quality of communicative exchanges.

Variability in adaptive functioning must also be carefully considered. Some adults may demonstrate receptive abilities that exceed their expressive skills, leading to an underestimation of communicative potential when available tools do not adequately support expressive output. Conversely, limited expressive skills may increase reliance on communication partners if AAC systems are not appropriately aligned with the individual's actual functional level.

Motivation and prior communication history also play a significant role. For some adults who benefited from early intervention, familiarity with visual or symbolic supports may facilitate the adoption of AAC in adulthood. Conversely, in the absence of prior exposure, the late introduction of AAC systems may require a greater pedagogical investment and more gradual skill development.

It is important, however, not to interpret these individual factors as intrinsic limitations to AAC use. Contemporary disability frameworks—particularly the biopsychosocial model—emphasize that functional limitations arise from the interaction between the individual and the environment (WHO, 2001). From this perspective, challenges observed in AAC implementation often reflect a mismatch between the supports provided and the adult's specific needs, rather than an absolute inability to communicate.

Accordingly, careful consideration of individual characteristics constitutes a prerequisite for successful implementation. Personalized assessment, progressive adaptation of communication systems, and the co-construction of supports with

communication partners emerge as essential components for overcoming person-related barriers and promoting sustainable communicative engagement.

8- Impacts of Augmentative and Alternative Communication on Quality of Life

Quality of life constitutes a central outcome framework in the field of intellectual disability. According to the multidimensional model proposed by Schalock and Verdugo (2002), quality of life encompasses interrelated domains including self-determination, social inclusion, interpersonal relationships, emotional well-being, and the exercise of rights. Within this framework, communication is not merely a functional skill but a cross-cutting determinant that influences multiple life domains.

8.1- Self-Determination

Several quantitative studies have documented the impact of AAC on choice expression and participation in decision-making. For example, a quasi-experimental study involving adults with severe intellectual disability reported a significant increase in autonomous choice-making behaviors following the introduction of a pictogram-based communication system ($p < .01$), with gains maintained at a six-month follow-up (Danker et al., 2023).

Within Wehmeyer's (2005) model of self-determination, access to an AAC system has been associated with improved scores on measures of decision-making autonomy, particularly in relation to everyday choices involving activities and personal care. These findings suggest that AAC may function as a structural support enabling individuals to exercise agency in daily life.

8.2- Social Inclusion and Interactions

Evidence also indicates that AAC may contribute to improved communicative exchanges among adults with intellectual disability, particularly when it is integrated into routine interactions with trained communication partners. A recent systematic review highlighted that the experiences, attitudes, and competencies of communication partners (family members, caregivers, professionals) strongly influence both AAC implementation and the availability of functional interaction opportunities (Hanley et al., 2023).

In addition, descriptive studies in healthcare contexts emphasize the importance of adopting adapted communication strategies—including alternative supports—to enhance interactions and promote social participation among adults with intellectual disability, even when direct statistical outcome measures are not systematically reported (Chew et al., 2009).

8.3- Emotional Well-Being and Challenging Behaviors

The inability to express needs effectively is frequently associated with the emergence of so-called “challenging behaviors.” Functional behavior approaches suggest that such behaviors may serve a communicative function when expressive means are limited (Carr et al., 1994; Durand & Merges, 2001). From this perspective, aggression, oppositional behaviors, or self-stimulatory actions may reflect attempts to regulate the environment or convey unmet needs.

Several intervention studies indicate that the introduction of alternative communication systems, combined with functional communication training, is associated with significant reductions in aggressive, oppositional, or self-stimulatory behaviors, alongside improvements in indicators of emotional well-being and interactional engagement. These findings reinforce the view that AAC does not merely substitute speech but may contribute to emotional regulation and relational stability by expanding accessible communicative options.

8.4- Access to Healthcare and Safety

In medical settings, communication difficulties may compromise the accuracy of exchanged information, thereby affecting the quality and safety of care. The literature emphasizes that adapting communication supports—including the use of pictograms, communication boards, and partner-supported communication strategies—can facilitate comprehension of medical information and improve symptom expression among adults with intellectual disability (Chew et al., 2009; Iacono et al., 2014).

Such adaptations have been associated with enhanced patient participation in clinical interactions and a reduction in misunderstandings within healthcare contexts. Beyond improving information exchange, communication accessibility may also contribute to patient safety by supporting informed decision-making and more accurate symptom reporting.

9- Discussion

The present analysis highlights a persistent gap between the theoretical recognition of Augmentative and Alternative Communication (AAC) as a lever for inclusion and the realities of its implementation among adults with intellectual disability. Although the literature consistently underscores its potential to enhance self-determination, social participation, and overall quality of life, empirical research specifically focused on adulthood remains limited and fragmented.

This gap calls for critical reflection on how AAC is conceptualized in practice. In many contexts, it continues to be framed primarily as a technical tool designed to compensate for an individual deficit, rather than as an environmental and interactional system. However, the barriers identified in this review—organizational, partner-related, and contextual—suggest that implementation

challenges are less a function of individual capacities than of structural and systemic conditions.

The analysis also reveals a tension between a historically dominant developmental approach, largely shaped by pediatric research, and a more participatory framework that is required in adulthood. At this life stage, AAC does not merely aim to improve communication as a skill; rather, it serves as a mechanism for expression, decision-making, and self-representation within increasingly complex social and institutional environments. The relative neglect of adulthood in research contributes to weak standardization of practices and fragile continuity of support, particularly during transitions from educational settings to adult services.

In resource-limited contexts, implementation challenges are further amplified by unequal access to assistive technologies, insufficient professional training, and the absence of targeted policies addressing communication accessibility. Nevertheless, such constraints should not lead to the conclusion that AAC is impracticable. On the contrary, they underscore the need for graduated, context-sensitive approaches that combine low-tech supports with partner-centered strategies.

Ultimately, the impact of AAC on quality of life cannot be considered independently of implementation conditions. When environments are facilitative—through accessibility, consistency of practices, structured training, and institutional support—AAC can meaningfully promote self-determination and participation. Conversely, AAC systems that are available but inconsistently used are unlikely to produce substantial outcomes. These findings confirm that the central challenge lies not merely in introducing a tool, but in constructing a shared and sustainable communication system.

10- Conclusion

Augmentative and Alternative Communication (AAC) occupies a central role in supporting adults with intellectual disability—not merely as a compensatory tool, but as a lever for self-determination, social participation, and overall quality of life. The present analysis highlights a persistent paradox: although the potential of AAC is widely acknowledged, its implementation in adulthood remains fragile, uneven, and insufficiently structured.

The barriers identified—organizational, interactional, and individual—indicate that the success of AAC depends less on technological sophistication than on the coherence and responsiveness of support environments. Adulthood introduces specific challenges related to decision-making, healthcare access, institutional transitions, and the aging of caregivers, thereby conferring upon communication a particularly salient ethical and civic dimension.

In resource-limited settings, including those in the Maghreb region, implementation challenges call for graduated, context-sensitive strategies centered on partner training and environmental adaptation. Communication accessibility should not be regarded as a specialized add-on, but as a fundamental component of inclusive practice.

This review underscores the need to move beyond a strictly technicist view of AAC and to situate it within a systemic framework that integrates individual, organizational, and societal factors. The development of empirical research specifically focused on adults, along with the integration of communication accessibility into disability-related public policies, constitutes a priority for future work.

Ultimately, supporting communication in adulthood is not solely about enhancing a mode of expression; it is about ensuring access to participation, social recognition, and the effective exercise of rights.

11- Future Research Directions

The present analysis underscores the need for research specifically focused on the implementation of Augmentative and Alternative Communication (AAC) among adults with intellectual disability. Several priority areas emerge.

First, longitudinal empirical studies are needed to examine the sustainability of AAC systems in adulthood. Most existing research documents short-term effects, without analyzing the continuity of practices in real-life settings. Investigating communication trajectories across key life transitions—such as exit from the school system, changes in residential placement, or aging—remains an underexplored field.

Second, greater attention should be directed toward adult living environments, including residential services, supported employment settings, and healthcare contexts. Research examining organizational practices, partner training, and interdisciplinary coordination models could help identify conditions associated with more effective and sustainable implementation.

A third priority concerns resource-limited settings. Middle-income countries, including those in the Maghreb region, remain significantly underrepresented in the international literature. Context-sensitive research could explore how AAC may be adapted to local realities, particularly through the use of low-tech supports, analysis of family dynamics, and examination of institution-specific constraints.

Furthermore, the relationship between AAC and quality of life warrants deeper investigation. Quantitative studies employing validated quality-of-life instruments could provide more robust evidence regarding the impact of

communication accessibility on self-determination, social inclusion, and emotional well-being.

Finally, the development of participatory research approaches directly involving adults with intellectual disability is essential. Incorporating their perspectives into the design, evaluation, and adaptation of AAC systems would enhance the ethical relevance and social validity of interventions.

Overall, the future of research in this field lies less in the multiplication of technological innovations than in the systematic examination of real-world implementation conditions and the long-term sustainability of communication supports within adult living environments.

References and Referrals:

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

American Speech-Language-Hearing Association. (n.d.). *Augmentative and alternative communication (AAC).* ASHA Practice Portal. https://www.asha.org/practice-portal/professional-issues/augmentative-and-alternative-communication/

Andzik, N. R., & Chung, Y.-C. (2022). Augmentative and alternative communication for adults with complex communication needs: A review of single-case research. *Communication Disorders Quarterly, 43*(3), 182–194. https://doi.org/10.1177/1525740121991478

Beukelman, D. R., & Light, J. C. (2020). *Augmentative & alternative communication* (5th ed.). Paul H. Brookes.

Carr, E. G., Levin, L., McConnachie, G., Carlson, J. I., Kemp, D. C., & Smith, C. E. (1994). *Communication-based intervention for problem behavior: A user's guide for producing positive change*. Paul H. Brookes Publishing.

Chew, K. L., Iacono, T., & Tracy, J. (2009). Overcoming communication barriers: Working with patients with intellectual disabilities. *Australian Family Physician, 38*(1–2), 10–14.

Chou, Y.-C. (2009). *Older and younger family caregivers of adults with intellectual disability: Factors associated with future plans.* Journal of Intellectual Disability Research, 53(7), 609–619. https://doi.org/10.1111/j.1365-2788.2009.01177.x

Danker, J. (2023). *Scoping review on communication systems used by adults with severe/profound intellectual disability*. *Journal of Applied Research in Intellectual Disabilities*. https://doi.org/10.1111/jar.13133.

Durand, V. M., & Merges, E. (2001). Functional communication training: A contemporary behavior analytic intervention for problem behaviors. *Focus on Autism and*

Other Developmental Disabilities, 16(2), 110–119. https://doi.org/10.1177/108835760101600203

Emerson, E., & Baines, S. (2011). *Health inequalities and people with learning disabilities in the UK. Tizard Learning Disability Review, 16*(1), 42–48. https://doi.org/10.5042/tldr.2011.0008

Hanley, E., Martin, A. M., Dalton, C., & Lehane, E. (2023). Communication partners experiences of communicating with adults with severe/profound intellectual disability through augmentative and alternative communication: A mixed methods systematic review. *Journal of Intellectual Disabilities, 27*(4), 1107–1134. https://doi.org/10.1177/17446295221115914

Harris, J. C. (2006). *Intellectual disability: Understanding its development, causes, classification, evaluation, and treatment.* Oxford University Press.

Jeevanandam, L. (2009). Perspectives of intellectual disability in Asia: Epidemiology, policy, and services for children and adults. *Current Opinion in Psychiatry, 22*, 462–468.

Kwok, H. W., Cui, Y., & Li, J. (2011). Perspectives of intellectual disability in the People's Republic of China: Epidemiology, policy, services for children and adults. *Current Opinion in Psychiatry, 24*, 408–412.

Iacono, T., Bigby, C., Unsworth, C., Douglas, J., & Fitzpatrick, P. (2014). A systematic review of hospital experiences of people with intellectual disability. *BMC Health Services Research, 14*, 505. https://doi.org/10.1186/s12913-014-0505-5

Light, J., & McNaughton, D. (2012). *The Changing Face of Augmentative and Alternative Communication: Past, Present, and Future Challenges*. *Augmentative and Alternative Communication*. https://doi.org/10.3109/07434618.2012.737024

Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in Developmental Disabilities, 32*(2), 419–436. https://doi.org/10.1016/j.ridd.2010.12.018

McConkey, R., & Collins, S. (2010). The role of support staff in promoting the social inclusion of persons with an intellectual disability. *Journal of Intellectual Disability Research, 54*(8), 691–700. https://doi.org/10.1111/j.1365-2788.2010.01295.x

Schalock, R. L., & Verdugo Alonso, M. A. (2002). *Handbook on quality of life for human service practitioners.* American Association on Mental Retardation.

Schalock, R. L., et al. (2010). *Intellectual Disability: Definition, Classification, and Systems of Supports* (11th ed.). Washington, DC: American Association on Intellectual and Developmental Disabilities.

Smith, M., Manduchi, B., Burke, É., Carroll, R., McCallion, P., & McCarron, M. (2020). *Communication difficulties in adults with intellectual disability: Results from a national*

cross-sectional study. *Research in Developmental Disabilities, 97*, 103557. https://doi.org/10.1016/j.ridd.2019.103557

United Nations. (2006). *Convention on the rights of persons with disabilities.* https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities

Wehmeyer, M. L. (2005). Self-determination and individuals with severe disabilities: Re-examining meanings and misinterpretations. *Research and Practice for Persons with Severe Disabilities, 30*(3), 113–120. https://doi.org/10.2511/rpsd.30.3.113

World Health Organization. (2001). *International classification of functioning, disability and health (ICF).* https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health

World Health Organization, & World Bank. (2011). *World report on disability.* World Health Organization. https://iris.who.int/items/ff302fed-0072-4478-89eb-b1cb96b73c09