RAIS Journal for Social Sciences | VOL. 9, No. 2, 2025
ISSN 2574-0245 (Print) | ISSN 2574-1179 (Online) | DOI: 10.5281/zenodo.17649484

Healthcare Operations Digital Transformations in Applied Behavior Analysis (ABA)

Quatavia MCLESTER[1], Darrell Norman BURRELL[2]

[1]Columbus State University, qmclester@captechu.edu
ORCID: https://orcid.org/0000-0003-1596-0517

[2]Georgetown University Pellegrino Center for Clinical Bioethics, USA; Marymount University, USA
dburrell@marymount.edu, ORCID: https://orcid.org/0000-0002-4675-9544

Corresponding author: Dr. Quatavia McLester, qmclester@captechu.edu

Abstract: Applied Behavior Analysis (ABA) therapy organizations are increasingly transitioning from traditional, in-person service models to digitally mediated telehealth systems; however, this shift introduces complex operational, cultural, and ethical challenges. While telehealth offers opportunities to expand access to behavioral health services for bilingual and culturally diverse communities, many ABA providers lack the organizational development expertise, technological literacy, and strategic business competencies necessary for the sustainable implementation of these services. This qualitative study examines the organizational readiness, data protection practices, workforce preparedness, and caregiver engagement factors that influence telehealth adoption through semi-structured interviews with fifteen participants, including telehealth experts, ABA clinicians, and certified organizational development professionals. Findings highlight barriers related to fragmented digital workflows, privacy concerns surrounding sensitive behavioral data, and disparities in access to technology and trust among multilingual families. Insights emphasize the need for interoperable data systems, culturally responsive engagement strategies, and comprehensive professional development to preserve treatment fidelity. Results inform actionable recommendations to support the creation of equitable, secure, and resilient telehealth ecosystems that can meet evolving payer expectations, mitigate systemic disparities, and enhance patient satisfaction in a competitive behavioral healthcare marketplace.

Keywords: Applied Behavior Analysis (ABA), Telehealth Adoption, Digital Transformation, Organizational Development, Behavioral Health Technology, Technology Literacy, Interoperability, Treatment Fidelity

JEL Codes: O30, O32, O33, M15

Introduction

The rapid proliferation of digital innovation has precipitated a profound shift in healthcare delivery paradigms, compelling behavioral health organizations to reimagine traditional service models. Within the field of Applied Behavior Analysis (ABA), this evolution toward telehealth-supported interventions presents both unprecedented opportunities and significant complexities. As ABA providers strive to meet the needs of diverse, multilingual populations, including individuals and families navigating autism spectrum disorder, co-occurring mental health conditions, and systemic access barriers, digital modalities offer a

critical avenue for expanding equitable care. This case study interrogates the transition from exclusively in-person ABA services to a predominantly telehealth-enabled model, situating the change within broader organizational, sociocultural, and technological contexts.

Telehealth's promise in ABA practice extends beyond mere convenience. Digital delivery infrastructures have the capacity to diminish geographic constraints, enhance treatment continuity, and facilitate culturally responsive "in-home" intervention without the burdens of physical presence. Previous research suggests that thoughtfully implemented telehealth can enhance caregiver training, increase treatment dosage, and improve ecological validity by supporting interventions where behaviors naturally occur (Basu & Muylle, 2021). Additionally, telehealth offers an avenue for linguistically attuned service provision, enabling access for families speaking English alongside Spanish, Farsi, and other languages often underserved by traditional healthcare systems. In communities historically marginalized by structural inequities, these affordances are not incidental; they are foundational to justice-oriented care delivery (Morrish et al., 2025).

Yet the transformative potential of telehealth-supported ABA is neither automatic nor ethically neutral. Without rigorous planning, digital transitions can exacerbate disparities in broadband access, digital literacy, and privacy protections, replicating inequities already embedded in healthcare systems (U.S. Department of Health & Human Services, 2023). The consequences of insufficient preparation may manifest as diminished treatment fidelity, caregiver disengagement, compromised data security, and erosion of trust between providers and the communities they serve. These risks underscore the necessity of a deliberate, research-informed approach to organizational change. Achieving effective integration demands more than technical substitution; it requires an intentional reframing of organizational culture, workforce competencies, and supervisory infrastructure. Behavior technicians, Board-Certified Behavior Analysts (BCBAs), and administrative personnel must develop proficiencies in remote data collection, synchronous coaching methodologies, privacy legislation compliance, and culturally responsive communication across digital platforms. Comprehensive change management strategies, including stakeholder mapping, iterative feedback loops, and transparent policy development, are indispensable for securing interdisciplinary alignment and sustaining clinician morale.

For ABA practices undertaking this transformation, stakeholder engagement is especially pivotal. Families, caregivers, schools, community partners, and clinical staff may hold divergent expectations, technological capacities, and cultural norms. A robust stakeholder analysis can illuminate these differences, mitigate resistance, and foster authentic buy-in. Emphasizing patient-centered design principles, personalization, linguistic accessibility, cultural humility, and trauma-informed delivery further positions organizations to meet the evolving needs of their communities.

This paper, therefore, examines the core business and organizational development challenges confronting ABA practitioners in the telehealth era, which include adapting clinical workflows, preserving therapeutic rapport across virtual interfaces, safeguarding ethical standards, and ensuring equitable access to care for populations whose identities intersect across ability, language, socioeconomic status, and culture. By attending to these interconnected dimensions, ABA organizations can develop a technologically adept, ethically grounded, and culturally responsive framework that advances behavioral health equity in an increasingly digital world. The subsequent section will delineate the principal barriers that impede successful digital transformation and outline evidence-based strategies to overcome them.

Problem Statement

Applied Behavior Analysis (ABA) therapy organizations undergoing a transition from traditional, in-person service delivery to digitally mediated care models face a constellation

of operational, cultural, and ethical challenges. While telehealth presents a promising avenue for expanding access to behavioral services, particularly for bilingual and culturally diverse communities, its adoption requires competencies that extend far beyond clinical skill sets (Morrish et al., 2025). ABA providers must acknowledge that clinical expertise alone does not inherently confer proficiency in business strategy, organizational development, technology management, or competitive market positioning. This limitation can impede decision-making, hinder efficient allocation of resources, and constrain the capacity to anticipate evolving client expectations.

At the organizational level, digital transformation requires cultivating a digital-first culture that can sustain innovation, support interoperable data systems, and optimize virtual workflows. Such a cultural shift affects leadership, clinicians, Registered Behavior Technicians, administrative teams, and clients simultaneously. Core issues include strategic technology integration, talent development, data protection, and rigorous privacy standards, especially when handling biometric or highly sensitive behavioral data (U.S. Department of Health & Human Services, 2023). However, these demands are especially challenging for clinicians, whose graduate training rarely includes formal instruction in organizational behavior, financial modeling, marketing strategy, or risk management, making it difficult for them to conceptualize and implement them effectively.

Market conditions further complicate this landscape. The ABA field is experiencing intensified competition, increased payer scrutiny, rising consumer expectations, and evolving insurance reimbursement models. Leadership must therefore not only champion the integration of technology but also analyze competitive advantages, anticipate regulatory shifts, and design scalable service models that align with stakeholder needs. Clinicians and support staff require comprehensive professional development to master telehealth platforms, digital documentation processes, and virtual caregiver coaching methodologies (Johnson et al., 2021). Without these competencies, treatment fidelity and client satisfaction may erode, ultimately undermining the organization's viability.

Client engagement represents another essential dimension of this transition. Many patients, particularly those from linguistically and culturally diverse communities, face barriers related to access to technology, literacy, and trust. Telehealth adoption strategies must therefore prioritize equitable access and avoid reproducing systemic disparities. Ethical oversight, evidence-based implementation frameworks, and culturally informed models of technology acceptance can mitigate risk and promote sustained engagement across diverse populations (Kim, 2025). Embracing tools such as the Digital Health Equity Framework and the Technology Acceptance Model helps ensure that the organization develops digital infrastructure without compromising inclusion, responsiveness, or therapeutic alliance.

Ultimately, ABA organizations that successfully integrate telehealth capabilities do so through strategic planning, comprehensive change management, and disciplined organizational learning. Failure to address the multifaceted challenges posed by this transformation may result in diminished care quality, weakened clinician engagement, reduced patient trust, and financial instability. As organizations continue transitioning away from face-to-face modalities, their long-term sustainability hinges on elevating business competence to the same level of refinement as clinical expertise.

Purpose of the Study

The purpose of this qualitative study is to explore the organizational, cultural, and ethical factors influencing Applied Behavior Analysis (ABA) therapy organizations as they transition from traditional, in-person service delivery to digitally mediated telehealth models. While telehealth holds promise for expanding access to behavioral support, particularly for bilingual and culturally diverse populations, existing evidence suggests that

many ABA providers lack the organizational development, technological literacy, and strategic business competencies required to sustain digital transformation effectively (Morrish et al., 2025). To address this gap, the study aims to generate a nuanced understanding of the barriers and facilitators that shape technology adoption, data protection practices, workforce preparedness, and caregiver engagement during this transition.

This inquiry will be guided by semi-structured, individual interviews with fifteen participants drawn from three stakeholder groups: five subject-matter experts in telehealth design and delivery, five ABA clinicians with direct experience providing services virtually, and five management and organizational development professionals certified in both change and project management. Collectively, these perspectives will illuminate how leadership culture, digital infrastructure, interoperability, privacy standards, and training initiatives influence organizational readiness and sustainability. Emphasis will be placed on challenges disproportionately affecting multilingual and marginalized communities, including access to technology, digital trust, and caregiver participation (Kim, 2025).

By synthesizing insights across clinical practice, technological innovation, and organizational strategy, this study aims to develop actionable recommendations to guide ABA organizations in building equitable, secure, and culturally responsive telehealth ecosystems. The anticipated outcome is an integrated conceptual understanding that supports operational resilience, strengthens treatment fidelity, and enhances patient satisfaction in a rapidly evolving behavioral healthcare marketplace.

Significance Statement

The adoption of telehealth within ABA organizations serving bilingual and culturally diverse populations carries significant implications for the accessibility, cultural relevance, and continuity of behavioral health services (Morrish et al., 2025). When executed with strategic precision, telehealth can overcome geographical obstacles, enable flexible caregiver participation, and facilitate personalized interventions for clients who have been historically marginalized within healthcare systems (Kim, 2023). This shift aligns with broader public health imperatives centered on health equity and community-responsive care delivery. However, ineffective organizational navigation of digital transformation introduces substantial operational and ethical risk. Telehealth systems can falter when organizations ignore the digital divide, as variable access to devices and broadband, combined with uneven technology literacy, disproportionately disadvantages minority and multilingual communities (Tan et al., 2025). Negative historical experiences with institutional systems can exacerbate mistrust in digital surveillance, potentially threatening adoption rates, caregiver engagement, and treatment outcomes. These dynamics are particularly acute in ABA, where caregiver training, consistent data capture, and collaborative goal setting are essential to therapeutic success (Tan et al., 2025).

Moreover, the expansion of telehealth heightens concerns regarding data privacy and cybersecurity. Behavioral health information is among the most sensitive forms of protected health data, and breaches can permanently erode trust, destabilize therapeutic relationships, and generate regulatory repercussions (Catapan et al., 2025). Leadership must therefore implement ethical oversight structures, enforce compliance policies, and cultivate a culture in which data protection is viewed as foundational rather than supplementary (Johnson et al., 2021). Such protections are instrumental in preserving organizational reputation, ensuring payer compliance, and safeguarding against litigation.

The stakes of this transition extend to patient satisfaction, clinical retention, and organizational revenue. Poorly executed digital transformation initiatives may alienate the very clients who rely on culturally attuned behavioral support, ultimately increasing attrition and exacerbating disparities (Balogun et al., 2025). For a sector increasingly influenced by

market competition, consumer feedback metrics, and payer-driven performance indicators, client satisfaction management is not merely an ancillary matter; it is a strategic imperative.

When ABA organizations cultivate an inclusive, ethically grounded, and technologically proficient digital ecosystem, they strengthen their capacity to deliver high-quality behavioral services, expand their market reach, and foster trust across diverse populations (Catapan et al., 2025; Johnson et al., 2021). This approach simultaneously supports operational resilience, clinician satisfaction, and improved patient outcomes. By contrast, organizations that fail to integrate strategic business practices into their telehealth adoption efforts risk falling behind in a rapidly evolving behavioral healthcare marketplace.

Consequently, the transition to telehealth represents more than a technical pivot; it is a strategic inflection point that requires interdisciplinary knowledge spanning business analytics, organizational development, and cultural competence (Balogun et al., 2025). To address this complexity effectively, the forthcoming literature review will synthesize empirical findings and best-practice frameworks relevant to digitally mediated behavioral health delivery in multilingual environments, providing both theoretical grounding and evidence-informed strategies for the ABA field.

Relevant Concepts to Digital Transformation in ABA Organizations

Apprehension

Apprehension refers to the cognitive process through which individuals perceive, interpret, and internalize new information to resolve emerging problems (Machi & McEvoy, 2022). In the context of ABA organizations transitioning to telehealth, apprehension is critical, as clinicians must assimilate technological and operational competencies that are traditionally absent from behavioral science training. Empirical evidence suggests that digital adoption necessitates purposeful learning across financial workflows, software interfaces, and data privacy statutes. For example, Registered Behavior Technicians learning to interpret cloud-based progress dashboards must apprehend both functional behavior concepts and interface analytics. Failure to develop this foundational cognitive capacity reinforces the competency gap highlighted in the problem statement and hinders organizational agility.

Ansoff Matrix

The Ansoff Matrix structures growth strategies through market penetration, market development, product development, and diversification (Islam et al., 2025). For ABA organizations facing intensified competition and shifting insurance reimbursement structures, this framework provides a strategic lens for evaluating digital expansion (Zamlynskyi et al., 2025). Market development might include telehealth services to clients in geographical "therapy deserts," while product development could involve asynchronous caregiver training modules. For instance, an organization might launch remote, bilingual social-skills groups, simultaneously expanding its reach and differentiating its services. This model directly addresses the problem statement's assertion that organizational success requires competencies transcending clinical expertise.

Argument of Advocacy

An argument of advocacy represents an evidence-based thesis guiding the logic of a literature review (Machi & McEvoy, 2022). Within the ABA digital transformation discourse, this argument must synthesize the outcomes of technology adoption, clinician workload considerations, privacy mandates, and implications for equity. Evidence strengthens proposals for telehealth infrastructure investment, persuading stakeholders resistant to cultural change. For example, citing data demonstrating improved parent participation during virtual sessions can support reimbursement negotiations. Formulating

such an argument is essential, as leaders must justify strategic pivots that align with market forces and trends.

Artificial Intelligence (AI)

Artificial Intelligence encompasses technological systems capable of performing tasks such as perception, interpretation, and problem-solving (Ezeamii et al., 2024; Russell & Norvig, 2020). In ABA contexts, AI-driven analytics can identify behavior-change plateaus earlier than manual review, enabling more personalized treatment planning. AI-enhanced dashboards might flag a sudden drop in session attendance among a specific linguistic group, signaling the need for modified caregiver onboarding. Deploying AI strategically addresses the problem statement's emphasis on scalability, efficiency, and the need for competencies beyond clinical training.

Bias

Bias refers to an emotional preference for or against a claim that lacks a grounded analysis (Machi & McEvoy, 2022). Organizational bias becomes problematic when clinicians assume digital modalities degrade therapeutic rapport even when evidence indicates otherwise. Bias can manifest through resistance to workflow modernization or reluctance to adopt cybersecurity protocols. For example, rejecting remote caregiver coaching on intuitive grounds diminishes client access for families with transportation barriers, undermining equity commitments. Addressing bias supports ethical, data-driven decision-making, which is critical to digital transformation.

Bilingual Therapy

Bilingual therapy involves delivering interventions in two languages, allowing clients to express themselves authentically and culturally (Gallegos-Rejas et al., 2025). Research shows linguistic concordance improves diagnostic clarity and increases therapeutic alliance, an outcome directly tied to client satisfaction. Telehealth expands access to bilingual clinicians across geographic boundaries, mitigating workforce shortages. For example, a telehealth platform may match a Persian-speaking parent with a culturally aligned BCBA, improving skill generalization.

Business Model Innovation

Business model innovation refers to the development of novel structures that support organizational financial viability and value delivery (Stoumpos et al., 2023). For ABA organizations, digital transformation can facilitate the adoption of subscription-based parent training, virtual group sessions, and remote supervision models. Such adaptations counter market volatility and payer unpredictability. For instance, a clinic might monetize teleconsulting partnerships with school districts, diversifying revenue beyond insurance reimbursement. Business model innovation directly addresses limitations in clinical training related to financial modeling and strategic foresight.

Change Management

Change management refers to the structured transition of individuals, teams, and systems toward strategic goals (Lemak et al., 2024). ABA clinicians often lack exposure to change leadership frameworks, which can lead to increased resistance to telehealth adoption. Structured rollout plans, including pilot groups, coaching cycles, and iterative feedback, improve compliance and reduce anxiety. For example, implementing a new digital documentation platform with weekly skill-building sessions can increase adoption rates.

Complex Argument

A complex argument integrates multiple claims to support a central thesis (Machi & McEvoy, 2022). Telehealth adoption requires complex argumentation that connects privacy mandates, reimbursement constraints, clinician workload, and equity outcomes. For instance, demonstrating that telehealth reduces cancellation rates, improves linguistic matching, and increases parent engagement supports comprehensive digital investment. Complex argumentation equips leaders to respond to payer scrutiny and justify strategic expenditures.

Cloud Computing

Cloud computing delivers scalable digital storage, networking, analytics, and computing power via remote servers (Stoumpos, 2023). ABA organizations rely on cloud systems to centralize treatment plans, store progress data, and ensure interoperability across devices. For example, a remote BCBA can update a behavior intervention plan in real-time, enabling immediate implementation by the technician. Cloud computing supports data transparency, aligning with client satisfaction objectives and privacy statutes.

Cybersecurity

Cybersecurity protects digital systems from unauthorized intrusion, data compromise, or operational disruption (Khalil et al., 2023). Because ABA organizations store sensitive behavioral data, including biometric metrics, breaches carry significant legal and ethical implications. Implementing multi-factor authentication, role-based access, and secure VPN usage reduces vulnerability. For example, requiring encrypted connections during telehealth sessions protects confidentiality across home Wi-Fi networks. Robust cybersecurity responds to the problem statement's call for rigorous privacy practices.

Data Analytics

Data analytics involves examining raw behavioral and operational data to support decision-making (Basu & Muylle, 2023). In ABA organizations, analytics may reveal session cancellation trends or identify optimal therapist-to-client ratios. For example, identifying that caregiver training engagement drops after 7:00 p.m. may inform the need for scheduling modifications. Leveraging analytics enhances operational efficiency and client satisfaction, aligning with market demands for measurable outcomes.

Digital Health Platforms

Digital health platforms integrate telemedicine, mobile health applications, and electronic records to coordinate care (Torous, 2025). These systems enable ABA clinicians to document progress, communicate effectively with families, and efficiently manage authorizations and paperwork. For instance, parents may view skill-acquisition graphs on a mobile app, strengthening engagement and perceived value.

Digital Innovation

Digital innovation utilizes novel technologies to create new organizational value (Lemak et al., 2024). Innovation may involve remote supervision technologies, automated billing workflows, or digital caregiver libraries. For example, asynchronous skill-modeling videos improve caregiver generalization without increasing staffing hours. Digital innovation responds to evolving consumer expectations and enhances competitive differentiation, ultimately driving business growth.

Diversification

Diversification involves entering new markets with new services, often enabled by technology (Rothwell, 2022; Zhu et al., 2025). ABA organizations can diversify by offering remote behavioral consultation to adult autism populations or tele-social skills groups for adolescents. Doing so reduces dependency on insurance reimbursement trends.

Deductive Argument

A deductive argument narrows broad premises into a defensible conclusion (Machi & McEvoy, 2022). Leaders may synthesize data showing reduced caregiver no-shows, improved rapport through bilingual pairing, and efficient documentation to conclude that telehealth expansion is a cost-effective approach. Deductive reasoning strengthens strategic planning and protects against intuition-driven decisions.

Digital Transformation

Digital transformation fundamentally restructures how healthcare organizations operate and deliver value (Zhang, 2025). In ABA organizations, this shift affects workflow scheduling, documentation methods, caregiver training, and data governance. For example, digitizing session notes allows multiple stakeholders to collaborate on treatment planning asynchronously. Transformation aligns directly with the problem statement's call for an innovation-driven organizational culture.

Digital Disruption

Digital disruption refers to rapid, technology-driven shifts that are reshaping industries (Saldanha, 2019). In ABA, consumer expectations regarding convenience and transparency are rising. Organizations that fail to implement digital scheduling or secure messaging risk losing clients to competitors offering seamless telehealth experiences. Digital disruption reinforces the urgency described in the problem statement.

The Five-Stage Digital Transformation Model

Stage 1: Foundation

The foundational stage of digital transformation describes the initial deployment of digital automation to streamline operational processes across key functional domains such as administrative scheduling, billing operations, internal communications, and data management (Saldanha, 2019). In ABA organizations, this stage often begins with digitizing session authorizations, transitioning paper data sheets to cloud-based platforms, and implementing secure scheduling software to minimize administrative friction. Clinicians and technicians, often trained primarily in behavioral science, must expand their technological literacy to operate these systems effectively. Organizational leaders, many of whom lack formal business training, face the challenge of selecting platforms that align with compliance requirements, payer audits, and client usability expectations. Without foundational infrastructure, downstream telehealth expansion is fragmented, exposing organizations to significant privacy risks.

Practically, an ABA clinic operating at the Foundation stage may replace paper treatment plans with electronic behavior intervention plans housed within a HIPAA-compliant cloud directory. Technicians can upload session notes via a secure mobile application, reducing documentation latency and improving supervisor oversight. This automation reduces human error and ensures that reimbursement documentation is transmitted promptly to payers. However, foundational transformation requires building

trust in digital automation; clinicians may initially distrust automated data visualization and prefer manual methods. To succeed, leadership must support ongoing training and demonstrate how digital automation enhances care accuracy rather than compromising clinical judgment.

Stage 2: Siloed

In the siloed stage, digital transformation expands, but implementation remains fragmented across departments (Saldanha, 2019). ABA organizations may pilot telehealth platforms within early intervention programs while in-person services continue to operate under legacy workflows. Disconnected systems can lead to duplicated administrative tasks, inconsistent client experiences, and difficulty aligning outcome metrics across service lines. The lack of coordination reflects the competency gap in organizational development noted in the problem statement: clinical leaders may excel in treatment design but lack familiarity with cross-departmental workflow optimization and strategic resource allocation.

A common example arises when a clinic introduces a digital parent-training portal exclusively within its toddler program, while other age-based departments continue to use email-based communication. Staff working across programs must juggle multiple communication tools, which can fragment care continuity. Families with multiple children may be confused when services differ by department. Trust in automation erodes when stakeholders encounter inconsistent experiences. To overcome siloing, organizations require leaders skilled in technological integration who can analyze bottlenecks and align digital platforms across divisions, competencies often missing from clinical preparation programs.

Stage 3: Partially Synchronized

The partially synchronized stage involves coordinated digital transformation efforts across the broader enterprise (Saldanha, 2019). Here, ABA organizations begin to unify data systems, align telehealth workflows, and standardize digital onboarding processes. Cross-functional committees may emerge to evaluate software performance, privacy compliance, and client satisfaction. This stage addresses several challenges highlighted in the problem statement: talent development, virtual workflow optimization, and equitable access. However, the organization may still face limitations in automation trust, digital literacy variance among clinicians, and integration gaps between legacy and newly adopted systems. Practically, an ABA company may standardize digital progress note formats across clinics while rolling out asynchronous behavioral training modules to all parents. Supervisors may conduct intermittent audits using automated progress dashboards to inform treatment decisions. However, integration challenges surface when clinicians lack confidence in automated alerts regarding client regression. Staff may underutilize analytics tools, defaulting to manual review. Leadership must emphasize training, demonstrate accuracy through case studies, and provide reinforcement for the appropriate use of digital tools. At this stage, the organization's culture begins shifting toward data-centric decision-making.

Stage 4: Fully Synchronized

In the fully synchronized stage, digital transformation leads to enterprise-wide alignment, where platforms, workflows, and data structures interact efficiently (Saldanha, 2019). ABA organizations achieve real-time interoperability between scheduling, authorization management, electronic health records, and telehealth portals. This allows clinicians to view session histories, caregiver compliance metrics, and billing eligibility within a single interface. Such synchronization supports predictive analytics, workload balancing, and

regulatory readiness. Privacy protocols are fully integrated, addressing concerns highlighted by the U.S. Department of Health & Human Services (2023). Staff performance feedback cycles incorporate digital efficiency metrics, enabling stronger clinical supervision.

As a practical example, consider an ABA clinic where automated alerts notify supervisors when a child's behavior data suggests plateauing progress. Supervisors may then schedule virtual coaching sessions for technicians to adjust prompting hierarchies. Meanwhile, the billing department receives automated payer-authorization updates, preventing denials. Families benefit from consistent messaging, transparent session data, and personalized resource recommendations through secure mobile portals. A fully synchronized posture enhances client satisfaction and supports competitive positioning. However, organizations must continue to invest in digital literacy to prevent stagnation.

Stage 5: Living DNA

The Living DNA stage represents the culmination of transformation, where digital innovation becomes embedded within an organization's identity (Saldanha, 2019). ABA organizations in this stage demonstrate agile reinvention, rapidly integrating emerging technologies such as AI-driven treatment recommendations, biometric wearables, and adaptive scheduling algorithms. Staff are culturally conditioned to expect continual improvement. Rather than viewing digital upgrades as disruptions, they perceive them as catalysts for clinical excellence. Leadership consistently evaluates market shifts, payer behaviors, and evolving neurodiversity needs to proactively reconfigure service models. The organization transitions from reactive adaptation to anticipatory innovation.

For example, ABA providers operating at this level may incorporate wearable devices that measure heart-rate variability to detect precursors to aggression. Digital alerts enable technicians to guide clients through coping protocols before escalation occurs. AI-supported authorization workflows automatically compile evidence summaries for insurance renewals. Moreover, multilingual telehealth interfaces evolve in response to culturally diverse user analytics. Ultimately, the Living DNA stage fosters resilience and positions the organization competitively in a market increasingly shaped by consumer expectations for seamless virtual care. Achieving this stage requires business acumen, strategic forecasting, and robust technology governance, competencies often lacking in clinical graduate training but essential for long-term viability.

Strategic Models in ABA Telehealth Transformation

The adoption of telehealth within Applied Behavior Analysis (ABA) therapy organizations represents a pivotal juncture in the evolution of behavioral healthcare delivery. Digital transformation demands not only technological integration but also the reconfiguration of clinical workflows, scheduling logistics, documentation structures, and the dynamics of therapeutic rapport. Successful transformation in ABA settings requires leaders who can translate conceptual strategy into operational reality, cultivate a culture of curiosity and adaptability, and simultaneously preserve treatment fidelity for clients with developmental and behavioral challenges. Critically, culture serves as the interpretive mechanism that determines whether new technologies are adopted, resisted, or merely superficially accepted (Michelman, 2018). Moreover, the ABA field often draws leadership from the clinical ranks, Board Certified Behavior Analysts (BCBAs), whose graduate preparation emphasizes behavioral science rather than organizational development or strategic forecasting. Without additional business strategy competencies, digital initiatives risk fragmentation, low adoption rates, and unintended inequity in access for culturally diverse families. The following sections examine foundational concepts necessary to lead this transformation and sustain improved care for diverse communities.

Fundamentals of Strategic Change in ABA Service Delivery

Rothwell (2015) provides an essential foundation for understanding the organizational complexity inherent in digital transformation. Rothwell emphasizes that strategic change begins with the acknowledgment that external conditions, such as insurance reimbursement structures, evolving consumer expectations, and technology adoption trends, are dynamic rather than static (Rothwell, 2015). For ABA organizations, this dynamism manifests in rising demand, regulatory shifts, and the increasing visibility of neurodiversity advocacy movements. Proactive adaptation thus becomes a necessary leadership competency: anticipating change rather than reacting under duress.

Rothwell's framework also emphasizes the importance of fostering psychological readiness across various stakeholder groups, including families, clinicians, billing personnel, and administrative coordinators. Without readiness, technology implementation often results in partial adoption and workflow bottlenecks. In ABA contexts, clinicians may struggle to integrate telehealth into behavior plans, parents may worry about privacy, and billing teams may be confused by the documentation codes used for telehealth. Strategic change requires leaders to systematically identify these friction points and build them into the transformation roadmap.

Foundations of Strategic Change in ABA Organizations

Rothwell argues that a clear, compelling vision, not merely a technological directive, is essential for mobilizing stakeholders (Rothwell, 2015). In ABA telehealth adoption, vision-setting might articulate how remote parent coaching increases generalization of skills into natural environments, how digital dashboards improve data visibility, or how virtual service offerings reduce waitlists for families in remote communities. Leadership engagement ensures this vision is not relegated to policy documents but embedded into operational routines. Another foundational element is wide stakeholder analysis. ABA organizations typically employ clinicians, RBTs, case managers, schedulers, billing specialists, and compliance personnel. Each of these actors has distinct needs: clinicians require reliable video connections for functional assessments, schedulers need integrated calendars, billing professionals require automated claim scrubbing, and families need culturally accessible platforms. Rothwell emphasizes that failure to map these differentiated needs creates organizational blind spots and erodes trust (Rothwell, 2015). Practical application includes stakeholder focus groups, post-implementation surveys, and digital "sandbox environments" for practice.

Foundations of Digital Transformation

Digital transformation in ABA organizations merges strategic foresight with tactical execution (Rothwell, 2015). Foresight anticipates macro-level shifts, including the normalization of virtual care, rising consumer expectations for transparency, and insurance mandates for data interoperability. Execution then translates these insights into tangible processes: platform selection, staff training cycles, cybersecurity investment, and revised documentation templates. Telehealth platforms enable remote functional behavior assessments, parent-training sessions, and social skills groups. These innovations address geographic disparities and linguistic exclusion by enabling bilingual clinicians to serve families in remote areas (Ezeamii et al., 2024; Rothwell, 2022). Remote monitoring technologies, including wearable sensors, can track sleep patterns, heart rate, or activity levels associated with tantrum behavior (Brown, 2022). These tools can supplement traditional periodic observation with continuous data streams, enabling earlier intervention and more effective shifts. However, digital transformation introduces new organizational demands: real-time troubleshooting competencies, session recording policies, incident

reporting protocols, and digital etiquette training for families. ABA organizations with minimal technological infrastructure may struggle to maintain HIPAA compliance, exposing families to risk. Therefore, digital transformation requires not only platform integration but also governance structures that safeguard privacy and ethical care delivery.

Foundational Tools in Practice

The Ansoff Matrix operationalizes growth strategy by categorizing initiatives into market penetration, market development, product development, and diversification (Islam et al., 2025). Market penetration involves increasing service utilization within existing client populations, often through digital enhancements such as intuitive scheduling dashboards, progress-tracking visualizations, and automated reminders. For ABA organizations, enhanced digital interfaces can increase parent engagement, improving treatment integrity and satisfaction. For example, implementing an app that displays weekly progress on tantrum reduction can reinforce caregiver participation and motivate continued attendance. From an organizational development perspective, penetration strategies require analytics competencies to monitor usage patterns, identify drop-off points, and adjust platform usability.

Market development expands services to new regions or demographics. Telehealth's geographic neutrality enables ABA organizations to reach communities that were previously excluded due to distance or limited bilingual staffing (Ezeamili et al., 2024; Rothwell et al., 2022). Partnerships with school districts, tribal health programs, or pediatric clinics can create digital "access hubs" for families lacking devices. Market development also requires cultural knowledge; bilingual clinicians can tailor telehealth materials to linguistic nuance, improving trust among diverse families.

Product Development and Diversification in ABA Telehealth

Product development creates new offerings for existing clients. ABA organizations may develop digital caregiver education libraries, asynchronous behavior modules, or AI-assisted assessment tools (Islam et al., 2025). For example, a parent struggling with toilet training could access on-demand instructional videos between live coaching sessions. This increases generalization across settings and reduces regression risk during scheduling gaps. Diversification extends beyond traditional ABA practice by integrating adjacent technologies such as speech-language cognitive rehabilitation games or occupational therapy sensory-modulation modules (Islam et al., 2025). In underserved areas, a single digital platform may become a comprehensive developmental resource. Diversification can also serve as a risk-management strategy in volatile insurance landscapes, creating alternative revenue streams.

Critically, these new offerings require support structures, technical assistance helpdesks, multilingual onboarding guides, and equity-centered access subsidies to avoid inadvertently widening disparities.

Continuous Feedback Loops and Iterative Learning

Rothwell emphasizes that change without continuous feedback tends to devolve into stagnation (Rothwell, 2015). ABA organizations can integrate analytics dashboards to track key performance indicators such as telehealth attendance, session duration, caregiver compliance minutes, and platform usability ratings. When dropout rates spike for non-English-speaking families, iterative learning triggers refinements, such as interface translation, the establishment of cultural liaison staff, or community partnerships.

Iterative loops require organizational humility, the willingness to revise assumptions based on lived parent experience rather than internal convenience. Quarterly review cycles, user-

journey mapping workshops, and service blueprinting can be employed to evaluate system pain points, ensuring digital evolution remains aligned with client values and cultural realities.

The Five-Stage Digital Transformation Model

Tony Saldanha's five-stage model provides ABA therapy organizations with a sequenced roadmap for transitioning from legacy, in-person delivery to integrated telehealth and remote-monitoring ecosystems, while balancing business strategy, organizational culture, and technology adoption (Saldanha, 2019). The model progresses from initial automation to enterprise synchronization and ultimately to a culture of continuous digital reinvention, addressing chronic operational pain points such as authorization workflows, multilingual caregiver coaching, outcomes reporting, and payer scrutiny. For providers serving culturally and linguistically diverse communities, the model clarifies that technology choices alone are insufficient; each stage requires explicit decisions about governance, talent development, privacy controls, and client-experience design to ensure digital augmentation strengthens, rather than erodes, therapeutic rapport. Applying these stages as a management cadence enables ABA leaders to connect investment decisions to measurable gains in access, equity, and satisfaction, embedding telehealth as a durable pillar of care rather than a reactive stopgap (Saldanha, 2019).

Stage 1 — Foundation: Laying the Groundwork for Change

The foundation stage establishes the digital backbone, secure connectivity, compliant platforms, encryption standards, and device readiness, without which telehealth and Remote Monitoring Systems (RMS) fail to operate reliably (Saldanha, 2019). Foundational tasks include assessing current systems, closing infrastructure gaps, and provisioning bandwidth, devices, and HIPAA-compliant applications to sustain continuous data capture (Maddox, 2024; Claggett, 2024). Within ABA environments, this means replacing paper data sheets with cloud-based encrypted capture; configuring multilingual portals; and stabilizing video connections for functional assessments, all of which protect privacy and reduce disruptions for families with transportation or scheduling barriers. One practical example is an ABA clinic serving Spanish- and Farsi-speaking families that equips Registered Behavior Technicians (RBTs) with managed tablets and standardized telehealth checklists. As a result, connection failures decline, time-to-bill shortens due to the use of structured digital notes, and caregiver trust increases because consent forms, session summaries, and homework are delivered in their preferred language (Saldanha, 2019; Claggett, 2024).

The foundation stage also requires clear policies governing identity verification, data retention, session recording, and informed consent across diverse populations. Developing bilingual orientation modules and culturally aligned digital literacy supports prepares caregivers who may be unfamiliar or cautious with technology. This stage signals to employees and families that technology is not optional but essential to contemporary care delivery.

Stage 2 — Siloed Transformation: Initial Implementation and Piloting

Siloed transformation pilots digital care within bounded programs to reduce risk, surface workflow issues, and refine value propositions before scaling (Saldanha, 2019). Controlled RMS pilots in specific service lines, such as chronic care follow-up or postoperative monitoring, enable organizations to fine-tune alert thresholds, triage processes, and communication pathways (Boikanyo, 2023; Claggett, 2024). For ABA settings, a bilingual early intervention team might pilot telehealth-based parent coaching with asynchronous home video review. Such trials reveal training gaps related to lighting, positioning, and

privacy, underscoring the need for multilingual policies and procedures. Pilots also quantify benefits, reduced cancellations, and faster feedback loops, which become persuasive messages to hesitant clinicians and payers.

A practical illustration involves RMS-assisted sleep diaries for toddlers with severe tantrums. Automated notifications prompt next-day virtual coaching in Spanish, accelerating intervention around bedtime routines. Limited-scope digital trials, such as these, provide culturally responsive improvements before broader implementations, thereby strengthening organizational confidence (Saldanha, 2019).

Stage 3 — Partially Synchronized: Cross-Functional Collaboration

In the partially synchronized stage, collaboration expands across departments, allowing clinical, IT, and administrative teams to jointly redesign end-to-end processes (Saldanha, 2019). Cross-functional coordination standardizes escalation paths, integrates RMS alerts into scheduling workflows, and defines handoffs between clinicians and coordinators to ensure timely interventions (Maddox, 2024; Gomes et al., 2023). For ABA organizations, RMS feeds, such as heart-rate variability signaling agitation, may trigger same-week virtual parent coaching. Without shared playbooks, however, alerts stall, and family trust erodes. Synchronization, therefore, requires common data dictionaries, bilingual scripting for caregivers, and role-based dashboards so technicians, Board Certified Behavior Analysts (BCBAs), and schedulers see consistent information.

Morning huddles offer a practical embodiment: alerts are reviewed across disciplines, IT ensures flags are routed to appointment slots, and coordinators contact families in their preferred language. This reduces the time from risk signal to intervention, improving outcomes and demonstrating equitable responsiveness (Maddox, 2024; Gomes et al., 2023).

Stage 4 — Fully Synchronized: Harmonizing and Scaling Operations

Full synchronization unifies platforms, policies, and metrics across all programs, allowing telehealth, RMS, electronic health records, scheduling, and billing to operate as a cohesive digital system (Saldanha, 2019). With common architectures, organizations can deliver virtual therapy, wearable-enabled monitoring of stress physiology, and continuous outcome tracking at scale (Attah, 2024; Gomes et al., 2023). At this stage, automation enhances business performance: authorization checks pre-validate notes, bilingual reminders reduce no-shows, and supervisors receive plateau alerts tied to treatment fidelity. Embedded privacy controls safeguard highly sensitive behavioral data, which is particularly relevant for neurodivergent populations.

A practical example is a networked ABA provider deploying integrated telehealth services across multiple regions. Parents view skill acquisition graphs on mobile devices, payers receive standardized outcomes exports, and clinicians adjust programs using trend dashboards. Families become more confident in implementing strategies between visits, and satisfaction increases consistently across sites (Gomes et al., 2023).

Stage 5 — Living DNA: Continuous Evolution and Innovation

The living DNA stage institutionalizes ongoing digital reinvention, enabling the organization to learn faster than external conditions change, an essential competency amid shifting reimbursement rules and population needs (Saldanha, 2019). Feedback loops, A/B testing, and predictive analytics fuel iterative improvement, while artificial intelligence and machine learning can augment triage, staffing decisions, and relapse prediction (Claggett, 2024). In ABA therapy, wearable devices can anticipate escalation cycles, multilingual chatbots can triage scheduling requests, and adaptive content can personalize caregiver training. Governance and ethics must keep pace with these enhancements, particularly for

communities with a history of distrust in surveillance. A practical example is quarterly reviews that retire underperforming features, expand high-impact multilingual assets, and adjust staffing models based on predicted demand at the ZIP-code level. Such cycles ensure innovations advance access, equity, and satisfaction for marginalized families (Saldanha, 2019; Claggett, 2024).

Transforming Business to Win in the Digital Economy

Competing in the digital health economy requires ABA leaders to redesign products, processes, and business models, rather than merely digitizing existing ones, so that value creation aligns with payer priorities and client experience (Basu & Muylle, 2023). Strategic advantage accrues to organizations that treat digital as core to growth, utilizing it to reshape offerings (such as telehealth groups), operations (through automated documentation checks), and models (including subscriptions and asynchronous consultations) (Basu & Muylle, 2023; Stoumpos et al., 2023). For ABA organizations, this shift supports hybrid service portfolios that enhance outcomes and financial sustainability while accommodating cultural and linguistic preferences. A practical example is a bilingual subscription offering caregiver micro-lessons paired with quarterly virtual BCBA consults. Families demonstrate measurable progress in natural settings, and reauthorizations renew more smoothly as outcomes improve (Basu & Muylle, 2023).

Patient-Centered Digital Transformation

A user-centered strategy is one of the most reliable predictors of successful digital adoption; platforms must be designed around caregiver needs, literacy, and culture rather than organizational convenience (Basu & Muylle, 2021, 2023). Organizations that iteratively redesign platforms based on patient feedback report higher usage and improved outcomes, with some documenting approximately 30% growth in telehealth utilization and high perceived ease and satisfaction (Basu & Muylle, 2023; Stoumpos et al., 2023, 2024). In ABA contexts, this approach involves linguistically adaptive portals, low-bandwidth video modes, simplified icons for low literacy, and culturally relevant examples in parent training. One compelling illustration arises from co-design sessions with Spanish-dominant caregivers. Following the redesign, navigation is simplified, voice-note functionality is added, and examples are localized. Session adherence increases, evening cancellations decrease, and families report greater confidence in implementing strategies between visits (Stoumpos et al., 2024; Basu & Muylle, 2021, 2023).

From Vision to Capability: Operationalizing AI and Telehealth

A digital advantage becomes real only when AI, telehealth, and RMS are integrated into workflows, governance structures, and incentive systems. Strategic metrics, such as time from RMS alert to intervention, bilingual satisfaction scores, and reauthorization rates, anchor improvement work. Transparency around automated decisions fosters trust, which is particularly important for culturally diverse communities that have a history of concerns about data privacy and protection. Digital literacy pathways for BCBAs and RBTs reinforce confidence and reduce resistance.

A practical demonstration is evident in leadership dashboards that track equity indicators, including utilization by language, device type, and ZIP code. When disparities emerge, targeted outreach and translated educational materials address them directly, preventing the digital scale from widening inequality while strengthening community trust (Basu & Muylle, 2023; Stoumpos et al., 2023).

Integrated Perspective

Across Saldanha's stages and Basu and Muylle's competitive lens, the managerial through-line for ABA organizations is unmistakable: construct a resilient digital backbone, pilot thoughtfully, synchronize enterprise-wide workflows, and institutionalize continuous, culturally responsive innovation. This approach converts telehealth from a technical deployment into a strategic capability that expands access for diverse communities while strengthening clinical outcomes, operational efficiency, financial stability, and long-term organizational viability (Saldanha, 2019; Basu & Muylle, 2023).

Implementation of AI Technology

Integrating artificial intelligence into ABA therapy operations can streamline administrative processes, enhance clinical decision support, and reshape business models in ways that improve performance and patient experience (Basu & Muylle, 2021). By automating scheduling, documentation validation, and authorization workflows, ABA organizations can reduce administrative overhead and redirect clinician attention toward client-facing therapeutic tasks. For example, predictive models that forecast no-shows can trigger multilingual appointment reminders in Spanish or Farsi, decreasing cancellations and improving continuity of care in culturally diverse communities (Ezeamii et al., 2024). These developments not only reduce operating costs but also strengthen treatment consistency, a critical variable in ABA outcomes.

AI-driven remote consultation support, automated data summarization, and progress-pattern detection can elevate clinical quality while addressing persistent workforce shortages and burnout (Lemak et al., 2024). When digital assistants automate routine reporting, Board Certified Behavior Analysts (BCBAs) can dedicate more time to functional analysis, caregiver coaching, and treatment fidelity checks, tasks that cannot be automated. This shift can improve job satisfaction and reduce turnover, strengthening organizational stability (Budd, 2023). As payers increasingly demand cost-efficiency and measurable gains, the strategic adoption of AI positions ABA organizations competitively in a rapidly evolving digital health landscape (Lemak et al., 2024).

AI and Improved Patient Outcomes

Patient-centered digital innovations can substantially improve health outcomes by extending the capacity of ABA organizations beyond the clinic walls (Gordon & Catalini, 2018). Hybrid care pathways that combine telehealth with in-person services allow families to receive coaching without transportation barriers and maintain therapeutic momentum during scheduling disruptions. Remote monitoring devices can track sleep patterns, activity levels, or stress indicators, enabling clinicians to intervene proactively before behavior escalates (Gazzarata et al., 2024). For families in rural or underserved areas, time-sensitive feedback can mitigate regression and improve generalization to natural environments.

Telehealth consultations further improve access, particularly for bilingual households that may struggle to find culturally and linguistically competent providers (Ezeamii et al., 2024). Flexible virtual appointments help increase caregiver attendance and improve parent-mediated treatment fidelity, which is a key predictor of ABA success. Meanwhile, AI-assisted prediction models can identify risks for treatment dropout or stalling in skill acquisition, prompting targeted adjustments that are tailored to individual culture, family dynamics, and access to resources (Ezeamii et al., 2024). Together, these technologies elevate the precision and responsiveness of care, improving outcomes for diverse communities.

Technology Ethics

Digital transformation in ABA therapy necessitates an ethical framework that strikes a balance between innovation and equity, transparency, and accountability (Hare, 2022; Serrano et al., 2023). Because behavior data is sensitive and potentially stigmatizing, especially in neurodivergent populations, ethical oversight must guide the design and deployment of telehealth systems. Structured dialogue among clinical leaders, technologists, and privacy experts ensures that technological enhancements support, not replace, the human relationships central to behavioral progress. Equitable design principles help mitigate disparities for families with low digital literacy, limited English proficiency, or constrained internet access.

Establishing ethical guidelines becomes increasingly important as automation and surveillance intersect with healthcare decision-making. Ethical review committees, accessible policies, and transparent communication help organizations avoid reinforcing biases through the use of algorithmic tools. This attention to fairness is critical in culturally diverse ABA populations, where trust can be fragile and historical inequities may influence engagement. By embedding ethical reflection into system development, ABA organizations safeguard therapeutic alliance and integrity.

The Concept of Neutrality in Technology

Technology is not inherently neutral; its design choices and governance can amplify or suppress voices, shape public discourse, and entrench bias (Hare, 2022). In digital health, inadequate attention to neutrality can inadvertently marginalize families whose linguistic or cultural contexts are not represented in training data or user interfaces. For example, platform designs optimized for English-dominant households might produce lower engagement among Spanish-speaking caregivers. Failure to recognize these inequities can fracture trust and compromise outcomes. Transformational leaders must therefore cultivate balanced perspectives, ensuring that digital platforms broaden, rather than narrow, access to information.

Controversies in platform moderation underscore how technological control can polarize communities and silence dissent, highlighting the risks associated with unexamined power (Glennon, 2024). In clinical telehealth, similar dynamics could emerge if symptom-reporting algorithms deprioritize subgroups or if automated alerts trigger unnecessary interventions. Legal precedents underscore the need to protect open dialogue and resist undue influence in digital systems, reinforcing the importance of ethical guardrails in ABA telehealth delivery.

Ethical Leadership in Organizations

Ethical leadership shapes organizational culture, influencing how staff respond to digital transformation and emerging risks (Johnson, 2021). Within ABA organizations, leaders who model transparency, empathy, and moral courage foster environments where clinicians feel safe to voice concerns about data security, algorithmic bias, or privacy vulnerabilities. Policies such as ethics committees, continuing education on digital ethics, and cross-disciplinary workshops build collective competencies and reduce vulnerability to crises (Awad & Ashour, 2022). This ethical climate is foundational to equitable care delivery, especially for marginalized language and cultural groups.

By investing in ethical literacy, leaders reinforce accountability while encouraging innovation. Clinicians who understand both the capabilities and limitations of digital tools are better positioned to advocate for clients, personalize interventions, and maintain therapeutic integrity. This culture becomes an asset as organizations scale their telehealth services and navigate shifting regulatory landscapes.

Bias Awareness

Bias awareness is critical when deploying telehealth platforms for multilingual and multicultural populations (Hare, 2022). Without intentional design, automated translation inaccuracies, culturally mismatched prompts, or interface complexity can create inequitable experiences. Leaders must therefore scrutinize platform defaults, algorithmic assumptions, and interface accessibility. By doing so, ABA organizations can avoid encoding biases into their clinical delivery and preserve engagement for families who have been historically underrepresented in digital healthcare.

The suppression of dissenting viewpoints, as seen in public technology controversies, demonstrates how biased systems can escalate polarization (Glennon, 2024; Mill, 1901). In ABA telehealth, algorithmic filtering that undervalues caregiver feedback can undermine collaborative planning. Legal cases reminding institutions to maintain neutrality offer valuable lessons for telehealth governance, reinforcing that robust oversight safeguards patient autonomy (Glennon, 2024).

Holistic Ethical Digital Healthcare

A holistic, hybrid healthcare model integrates technology, privacy, equity, and cultural responsiveness to effectively serve diverse patient groups (Serrano et al., 2023). By combining telehealth, remote monitoring, biometrics, and in-person visits, ABA organizations can personalize care without overburdening families. This approach reduces geographic disparity and improves continuity for Spanish- and Farsi-speaking patients, aligning care with cultural norms. Hybrid models allow high-acuity clients to receive continuous support while freeing clinicians from excessive travel demands, increasing service reach.

Hybrid delivery also reduces strain on the healthcare system by preventing crises before they escalate, improving chronic condition management, and maximizing the use of limited provider capacity (Serrano et al., 2023). For families with limited time or transportation options, virtual coaching enhances treatment fidelity and generalization in natural contexts. Remote biometric feedback deepens clinical insight but requires careful privacy stewardship to prevent discriminatory misuse (Farid et al., 2021).

Ethics of Privacy in Patient Care

Protecting privacy is central to digital ABA service delivery, as behavior data can contain highly personal insights into family dynamics and neurodevelopmental profiles (Hare, 2022). Regulations such as HIPAA establish foundational safeguards; however, the expansion of telehealth requires additional controls to govern device sharing, cloud storage, and session recording (U.S. Department of Health & Human Services, 2023). Transparent consent processes preserve autonomy and strengthen trust among culturally diverse populations that may be wary of surveillance. Remote monitoring enhances clinical responsiveness, but organizations must ensure secure interfaces, limited data access, and strong encryption. By foregrounding privacy as a guiding value, ABA organizations reinforce ethical alignment and protect vulnerable clients.

The Promise and Peril of Biometrics

Biometric technologies can enhance ABA treatment insights by linking physiological stress markers with behavioral patterns, allowing for more precise timing of interventions (Farid et al., 2021). However, these benefits introduce ethical questions about consent, storage duration, and potential secondary use. Data collected through smart devices may inadvertently reveal information beyond the therapeutic scope. When unmanaged, these

risks disproportionately affect marginalized populations who already experience structural surveillance.

Balancing innovation with protective safeguards, access logs, restrictions on third-party sharing, and robust anonymization ensures that biometrics augment, rather than undermine, therapeutic relationships. Ultimately, biometric adoption must be paired with strong ethical governance and ongoing oversight (U.S. Department of Health & Human Services, 2023).

Ensuring Ethical Use of Technology

Safeguards must accompany any technological expansion to preserve patient dignity and control. Organizational protocols should define what data is collected, how it is used, who has access to it, and how long it is retained (Hare, 2022). Policymakers and clinical leaders share responsibility for developing digital ethics competencies, enabling clinicians to proactively identify misuse risks. Innovation alone is insufficient; ethical frameworks must be embedded into design, training, and monitoring to prevent exploitation (U.S. Department of Health & Human Services, 2023). When executed thoughtfully, digital systems in ABA therapy can expand access, enhance equity, and foster trust across diverse linguistic and cultural communities.

Digital Health Equity Framework

Applying a structured digital health equity framework enables ABA organizations to design telehealth systems that meet the needs of bilingual and minority communities by emphasizing access, culturally relevant content, digital literacy, and supportive policy advocacy (Kim et al., 2025). For ABA providers, this means developing multilingual caregiver training modules, culturally responsive behavior intervention materials, and user interfaces that consider literacy levels and cultural contexts. Such investments strengthen engagement among populations that traditionally face barriers to behavior-analytic services, improving treatment fidelity and family participation. By grounding telehealth strategy in equity-oriented design, ABA organizations expand reach while reinforcing their commitment to social responsibility.

Feedback and Participatory Design

Integrating structured feedback mechanisms, including telehealth trust and confidence surveys, allows ABA organizations to quantify patient perceptions and identify disparities in access, communication, and cultural responsiveness (Catapan et al., 2025). Collecting primary and secondary language data reveals how linguistic mismatches or limited cultural tailoring can erode trust, which is crucial to the success of caregiver-mediated interventions. Engaging families in participatory design, co-creating features, interfaces, and workflows, enhances acceptance and increases utilization among marginalized communities. This alignment between user experience and operational design strengthens market penetration and supports continuous quality improvement within ABA service delivery.

Data Privacy and Ethical Trust

Robust data privacy protocols are crucial to the adoption of telehealth in ABA, where sensitive behavioral data intersect with family dynamics and protected health information. Advanced encryption, authentication controls, and routine security audits help reduce breach risk and ensure compliance with regulatory requirements, such as HIPAA (Catapan et al., 2025). Transparent communication about data storage and consent further reinforces caregiver trust, particularly among minority populations historically subject to institutional

harms. By embedding privacy safeguards into operational infrastructure, ABA organizations protect clinical relationships and minimize legal exposure.

Equitable Integration of Telehealth

Collectively, these strategies support the seamless and equitable integration of telehealth within ABA service models, thereby expanding access to families who are restricted by geography, transportation, or language barriers. When equity frameworks, caregiver feedback loops, and privacy safeguards are integrated, organizations can enhance patient satisfaction, improve clinical outcomes, and differentiate themselves competitively in a crowded digital health market (Catapan et al., 2025). This alignment enables ABA providers to serve diverse communities more effectively while positioning the organization for sustainable growth in an increasingly virtual healthcare landscape.

Data Results

1. Interview Question

How has the transition to telehealth impacted organizational readiness and workflow within ABA service settings?

Theme

Workflow Fragmentation and the Need for Structured Digital Processes

The transition to telehealth exposed underlying workflow discontinuities that were previously masked by in-person operations. Communication that once moved informally across hallways or during team huddles now requires structured digital systems that not all stakeholders understand. This fragmentation creates inconsistent documentation practices, delays communication across teams, and increases the likelihood of errors that compromise treatment fidelity and continuity of care. A more standardized, digitally integrated process is needed to unify clinician behavior, scheduling coordination, and documentation pathways across the organization.

Participant Quotes

- *P1 (Telehealth Expert):* "When we first shifted online, we realized our workflows weren't really built for digital work. Suddenly, every document had to be uploaded somewhere, and every question had to be sent through a platform, which slowed everything down. If we had workflow checklists or clearer digital processes, it wouldn't feel like everyone is reinventing the wheel every day. It would make the sessions run smoother and help us avoid missing key documentation steps."
- *P7 (ABA Clinician):* "Right now, clinicians are basically doing whatever works for them personally, and that makes things messy across the board. When you're hopping between platforms and trying to track client progress without standardized tools, it's really easy to forget something important. If we had one unified system, or even just mapped-out workflows, I think we'd see fewer errors and less stress. That alone would probably boost treatment consistency."
- *P12 (Organizational Development Professional):* "People underestimated how much coordination would be required once we were all separated behind screens. It's not just turning on Zoom; it's also ensuring that scheduling software connects to billing, sharing caregiver materials securely, and ensuring that data flows to supervisors. If we examined quarterly workflow audits or role-based workflow maps, we could quickly close these gaps. Without intentional redesign, digital chaos just becomes the new normal."

Five Practical Recommendations

1. Develop standardized digital workflow checklists for scheduling, documentation, and caregiver coaching to ensure consistency and efficiency.
2. Implement a unified practice management platform that integrates scheduling, billing, and records management.
3. Conduct quarterly workflow audits to identify bottlenecks.
4. Create role-specific workflow maps to reduce ambiguity.
5. Establish rapid-response technical support during session hours.

2. Interview Question

What challenges have clinicians experienced related to technology literacy among staff, caregivers, and clients?

Theme

Uneven Technology Competence Constrains Treatment Fidelity

Variation in technology literacy creates significant friction in telehealth delivery. Many caregivers struggle to navigate platforms, join meetings correctly, or adjust camera angles to allow accurate observation. Clinicians often must spend session time troubleshooting instead of implementing behavior plans, which reduces instructional density and delays progress in intervention. Without structured digital coaching and caregiver support materials, treatment quality becomes inconsistent and inequitable.

Participant Quotes

- *P4 (Telehealth Expert):* "A lot of families are using old devices or unreliable Wi-Fi, and that means half the session is spent reconnecting or freezing. When the video lags, I can't really see behaviors or coach caregivers effectively. Doing pre-session tech checks or offering device loaner programs would make a huge difference. It'd let us focus on therapy instead of fixing tech problems every five minutes."
- *P8 (ABA Clinician):* "When something goes wrong, like video or audio cutting out, most clinicians panic because they haven't been trained to troubleshoot. We lose momentum, and families start to feel frustrated or embarrassed. If we had multilingual navigation guides or troubleshooting scripts, we could coach parents more calmly. Honestly, training that focuses on real-world telehealth problems would help everyone feel more confident."
- *P13 (Organizational Development Professional):* "Caregivers with limited digital literacy tend to disengage faster, especially when English isn't their first language. You can see them get overwhelmed and just shut down. A multilingual digital literacy orientation would help them feel included and capable right from the start. It's really about making sure the tech doesn't become another wall they have to climb."

Five Practical Recommendations

1. Provide multilingual digital literacy micro-training before treatment.
2. Offer device loaner programs for families with outdated hardware.
3. Train clinicians on troubleshooting and digital contingency planning.
4. Create visual platform guides in multiple languages.
5. Conduct pre-session tech checks to stabilize connectivity.

3. Interview Question

How has telehealth affected service accessibility and trust among bilingual and culturally diverse families?

Theme

Cultural and Linguistic Mistrust Toward Digital Surveillance

Families from historically marginalized communities may fear data misuse due to prior negative institutional experiences. Differences in cultural norms may also affect how behaviors are interpreted when viewed through a screen. Language barriers increase the likelihood of misunderstanding, making families hesitant to participate openly. Without intentional trust-building interventions, telehealth risks reinforcing existing inequities.

Participant Quotes

- *P2 (Telehealth Expert):* "Families often ask exactly where their videos are stored and who can see them, and sometimes we don't have simple answers. When we can't explain things clearly, their trust disappears fast. If we held privacy education sessions or offered alternatives to video recording, I think more families would feel secure. Transparency is everything for these clients."
- *P9 (ABA Clinician):* "Some families associate digital monitoring with systems they've had really bad experiences with, like immigration or government surveillance. When you can see that fear, you have to slow down and explain things carefully. Community trust webinars could go a long way in making things less scary. Without that, some families just avoid telehealth altogether."
- *P14 (Organizational Development Professional):* "When you're interpreting behavior through a camera and trying to translate cultural context on the fly, misunderstandings are really common. Bilingual liaisons would greatly help in preventing miscommunication. They could bridge the gap before mistrust starts to build. Families just need to feel like they're not being judged or watched unfairly."

Five Practical Recommendations

1. Add cultural trust screening questions to the intake.
2. Provide plain-language explanations of data practices.
3. Assign bilingual cultural liaisons.
4. Offer alternatives to video storage when possible.
5. Host community education webinars demystifying telehealth.

4. Interview Question

What ethical or privacy concerns have emerged regarding the collection of sensitive behavioral data in virtual environments?

Theme

Heightened Anxiety Over Data Security and Compliance Obligations

Behavioral sessions often reveal deeply personal family dynamics. Without clearly communicated security policies, clients may assume the worst-case scenario. Clinicians struggle to articulate what is encrypted, who has access to footage, or how long it is stored. Ethical ambiguity heightens fear, particularly in households where privacy concerns hold significant cultural significance.

Participant Quotes

- *P3 (Telehealth Expert):* "We're collecting more digital data now than ever before, but families don't really know what happens to it. I've had caregivers ask about storage length and who reviews the videos, and I didn't have a good answer. If we had standardized scripts, it would calm everyone down. It's all about communicating clearly and consistently."
- *P10 (ABA Clinician):* "Behavior footage can show a lot about a family's home life, like parenting style or sibling interactions. If that ever leaked, I can't imagine the damage it could cause to trust. Annual cybersecurity audits and role-based access would make parents feel safer. It's about protecting them from worst-case scenarios."
- *P15 (Organizational Development Professional):* "We do have compliance policies, but clinicians don't always understand them deeply enough to explain to parents. When providers hesitate, parents get nervous. A simple privacy dashboard could go a long way in building confidence. It would make everything more transparent and straightforward."

Five Practical Recommendations

1. Provide clinicians with scripted data-handling explanations.
2. Publish privacy dashboards for families.
3. Conduct annual cybersecurity audits.
4. Create incident response notification procedures.
5. Restrict access to video footage through role-based permissions.

5. Interview Question

What organizational supports would improve clinician preparedness for telehealth delivery?

Theme

Structured Professional Development and Digital Competence Building

Telehealth requires nuanced communication skills, caregiver coaching fluency, and strong verbal prompting strategies. Baby-monitor-style observation replaces traditional hand-over-hand prompting, making sessions more cognitively taxing. Without formalized training sequences, clinicians default to guesswork. This compromises intervention precision and increases job stress.

Participant Quotes

- *P5 (Telehealth Expert):* "Graduate school didn't prepare us for virtual coaching. It's harder to prompt caregivers verbally when you can't model physically. Simulation workshops would help us practice these moments. Right now, most of us are just winging it."
- *P11 (ABA Clinician):* "Optional trainings don't get attended by the people who need them most. When they fall behind, it just widens the skill gap across the team. Telehealth mentorship would help new clinicians learn the ropes more quickly. It keeps the team more balanced."
- *P14 (Organizational Development Professional):* "We need standardized modules that focus on telehealth etiquette and digital ethics. Many clinicians are uncertain about how to manage online distractions. Having telehealth fidelity checklists would help us maintain consistency and ensure quality. It would also help supervisors coach more targeted skills."

Five Practical Recommendations

1. Require competency-based telehealth certifications.
2. Offer simulation-based training with mock caregivers.
3. Add digital ethics to onboarding modules.
4. Provide ongoing mentorship in virtual service delivery.
5. Use telehealth-specific fidelity checklists during supervision.

6. Interview Question

How is telehealth affecting competitive positioning and organizational sustainability in the ABA market?

Theme

Digital Capability as a Competitive Differentiator

Market pressure is intensifying. Families compare platforms, accessibility, multilingual resources, and responsiveness. Payers prioritize organizations able to demonstrate clear digital outcomes. Telehealth proficiency now directly influences client retention and referral patterns.

Participant Quotes

- *P1 (Telehealth Expert):* "Payers are really starting to pay attention to digital infrastructure maturity. If you can't show stability and good outcomes, you're at a disadvantage. Benchmarking against competitors would help us stay current. It's becoming a real credential test."
- *P7 (ABA Clinician):* "Families drop off fast if the telehealth experience is clunky or confusing. I've seen parents switch providers for better apps alone. Improving platform stability would boost retention. It's not always about the therapy. Sometimes it's the tech."
- *P12 (Organizational Development Professional):* "Organizations with stronger analytics are adjusting faster to market changes. Those without data are basically guessing. Offering digital outcome reports to payers builds credibility. It proves we're serious about quality."

Five Practical Recommendations

1. Improve bilingual UX in telehealth portals.
2. Track caregiver engagement metrics.
3. Benchmark digital practices across competitors.
4. Provide payer-friendly outcome dashboards.
5. Prioritize platform stability and low-latency features.

7. Interview Question

How do shifting market pressures influence leadership decision-making during digital transformation?

Theme

Strategic Hesitation Driven by Regulatory Ambiguity

Leadership faces reimbursement uncertainty and lacks clear long-term parameters. This leads to under-investment in infrastructure, delaying organizational growth. Strategic hesitation increases competitive vulnerability and frustrates clinicians waiting for better tools.

Participant Quotes

- *P3 (Telehealth Expert):* "Leaders hesitate because reimbursement rules keep changing, and no one wants to invest blindly. Forecasting models would help us make better decisions. Right now, everyone's nervous, and that slows innovation."
- *P8 (ABA Clinician):* "We need digital benchmarks that justify these investments. Without them, leadership thinks we're exaggerating the need. Scenario planning could show long-term savings. It's a perspective shift, really."
- *P13 (Organizational Development Professional):* "Leaders feel stuck between innovation and compliance risk. Partnerships with vendors could help us scale more safely. Flexible pricing takes away some of the fear. It's about lowering the barrier to try."

Five Practical Recommendations

1. Form a regulatory watch committee.
2. Pilot scalable solutions before full rollout.
3. Diversify funding sources.
4. Use scenario-based forecasting for budgeting.
5. Build flexible partnerships with telehealth vendors.

Conclusions

The transition to digitally mediated service delivery in Applied Behavior Analysis organizations requires more than the adoption of new tools; it necessitates a fundamental redesign of workflows, business models, ethical governance, and cultural responsiveness. Telehealth, artificial intelligence, and remote monitoring systems offer measurable gains in access, continuity of care, and clinical precision, particularly for multilingual and historically underserved communities. However, these advantages materialize only when digital systems are embedded within interoperable infrastructures, supported by workforce development, and guided by equity-centered ethical oversight. Organizations that integrate privacy stewardship, caregiver-centered platform design, and data-driven decision-making can enhance therapeutic relationships, improve treatment adherence, and maintain trust in their services. Collectively, the evidence demonstrates that digital transformation must be pursued as a strategic capability, one that simultaneously elevates efficiency, equity, clinical outcomes, and long-term organizational viability.

Operational Implications

Operationally, ABA organizations must construct a resilient digital backbone that coordinates scheduling, documentation, billing, caregiver communication, and data review through unified platforms. Standardized digital workflows, simulation-based telehealth competencies, and multilingual support resources reduce fragmentation, mitigate treatment disruptions, and improve service consistency. Leadership dashboards that track device type, language utilization, and ZIP-code disparities enable targeted interventions to prevent digital expansion from widening inequities. Embedding AI into routine tasks can streamline authorizations, predict no-shows, and detect progress patterns, improving continuity while reducing clinician burnout. Operational excellence in this context stems from intentional process engineering, interoperability, and continuous quality improvement, all of which are anchored in equity and transparency.

Business Implications

From a business perspective, digital capability now functions as a competitive differentiator in an increasingly scrutinized behavioral health market. Payers reward organizations that

demonstrate cost efficiency, measurable outcomes, and platform stability, while families gravitate toward providers offering multilingual resources, intuitive interfaces, and flexible hybrid models. Subscription-based caregiver micro-lessons, asynchronous consults, and dynamic outcome reporting can unlock new revenue streams and smooth reauthorization cycles. Predictive analytics enhances retention and reduces cancellations, driving profitability through operational efficiency rather than relying solely on volume. Hesitation driven by regulatory ambiguity threatens market positioning; organizations that invest in scenario forecasting, vendor partnerships, and flexible pricing models are better positioned to adapt and scale.

Client Relationship Implications

Telehealth intensifies the relational dimensions of care, particularly for bilingual households navigating historical mistrust of digital surveillance. Transparent communication about data storage, consent, and access rights is essential for maintaining a therapeutic alliance. Culturally responsive interface design, bilingual liaisons, and participatory feedback loops strengthen engagement and reduce attrition. Flexible virtual appointments increase caregiver attendance, thereby enhancing parent-mediated treatment fidelity, which is a key predictor of ABA success. Ultimately, relationships thrive when technology amplifies, rather than substitutes for, human connection, thereby reinforcing client autonomy, dignity, and psychological safety.

Higher Education Implications

For graduate programs preparing behavior analysts, curricula must evolve to include digital ethics, organizational development, data privacy, culturally responsive technology design, and telehealth-specific coaching methodologies. Current training pathways often fail to adequately prepare clinicians for remote prompting strategies, platform troubleshooting, or oversight of algorithmic bias. Simulation-based virtual practicums, competency-based telehealth certifications, and interdisciplinary coursework in human–computer interaction can build readiness for hybrid care environments. Embedding equity frameworks and privacy literacy into professional preparation ensures that future practitioners can ethically navigate sensitive behavioral data while supporting diverse linguistic and cultural contexts. By modernizing educational design, universities strengthen both workforce resilience and the field's collective capacity to lead responsibly in a digital health economy.

References

Arif, M., Sajjad, M., Khan, R. A., & Ehsan, H. R. U. (2025). Development and validation of a tool to measure telehealth educational environment (THEEM). *BMC Medical Education*, *25*(1), 136.

Attah, R. (2024). Cross-functional team dynamics in technology management: A comprehensive review of efficiency and innovation enhancement. *Engineering Science & Technology Journal.* V5, 3248-3265.

Awad, N, & Ashour, H. (2022). Crisis, ethical leadership, and moral courage: Ethical climate during Covid-19. *Nursing Ethics, 29*(6), 1441-1456.

Balogun, A. K., Dada, S. N., Kazeem, O., & Bakare-Adesokan, K. A. (2025). Integrating telehealth services in social work practice for vulnerable groups.

Basu, A., & Muylle, S. (2021). Competitive digital innovation: Transforming products, processes, and business models to win in the digital economy. Cambridge University Press.

Boikanyo, K., Zungeru, A., Sigweni, B., Yahya, A., & Lebedwe, C. (2023). Remote patient monitoring systems: Applications, architecture, and challenges. *Scientific African.* https://www.sciencedirect.com/science/article/pii/S2468227623000959

Buryk, Z., Piatnychuk, I., & Biloshkurskyi, M. (2025). Leadership, management, and socio-economic adaptation: Contemporary challenges and strategic perspectives. *International Journal of Organizational Leadership*, *14*(First Special Issue 2025).

Boikanyo, K., Zungeru, A., Sigweni, B., Yahya, A., & Lebedwe, C. (2023). Remote patient monitoring systems: Applications, architecture, and challenges. *Scientific African.* https://www.sciencedirect.com/science/article/pii/S2468227623000959

Budd, J. (2023). Burnout Related to Electronic Health Record Use in Primary Care. *Journal of Primary Care & Community Health*, *14*, 21501319231166921. https://doi.org/10.1177/21501319231166921

Catapan, S. D. C., Snoswell, C. L., Haydon, H. M., Banbury, A., Thomas, E. E., Caffery, L. J., ... & Kelly, J. (2025). Trust and confidence in telehealth-delivered services: a nation-wide cross-sectional study. *Health Marketing Quarterly*, *42*(1), 48-66.

Claggett, J., Petter, S., Joshi, A., Ponzio, T., & Kirkendall, E. (2024). An infrastructure framework for remote patient monitoring interventions and research. *Journal of Medical Internet Research.* https://pmc.ncbi.nlm.nih.gov/articles/PMC11176884/

Da Silva Jr, J. B., Saisó, S. G., Cornejo, S., Rodriguez, D., Fitzgerald, J., Marti, M., ... & D'Agostino, M. (2025). From hope to reality: How telehealth and strategic procurement are reshaping public health. *Revista Panamericana de Salud Pública*, *49*, e28.

Dissertation Template. (2023). *DBA 736 A: Maximizing digital transformation* (pp. 19-23). Marymount University.

Ezeamii, V. C., Okobi, O. E., Wambai-Sani, H., Perera, G. S., Zaynieva, S., Okonkwo, C. C., Ohaiba, M. M., William-Enemali, P. C., Obodo, O. R., & Obiefuna, N. G. (2024). Revolutionizing healthcare: How telemedicine is improving patient outcomes and expanding access to care. *Cureus*, *16*(7), e63881. https://www.cureus.com/articles/265705-revolutionizing-healthcare-how-telemedicine-is-improving-patient-outcomes-and-expanding-access-to-care#!/

Gazzarata, R., Almeida, J., Lindskold, L., Cangioli, G., Gaeta, E., Fico, G., & Chronaki, C. (2024). HL7 Fast healthcare interoperability resources (HL7 FHIR) in digital healthcare ecosystems for chronic disease management: Scoping review. *International Journal of Medical Informatics*, 189. https://www.diva-portal.org/smash/get/diva2:1888978/FULLTEXT01.pdf

Farid, F., Elkhodr, M., Sabrina, F., Ahamed, F., & Gide, E. (2021). A Smart biometric Identity Management Framework for Personalized IoT and Cloud Computing-Based Services. *Sensors. 21* (2), 552; https://doi.org/10.3390/s21020552

Gallegos-Rejas, V. M., De Guzman, K. R., Kelly, J. T., Smith, A. C., & Thomas, E. E. (2025). Strategies to improve telehealth access for culturally and linguistically diverse communities: a systematic review. *Journal of Public Health*, fdaf030. https://academic.oup.com/jpubhealth/advance-article/doi/10.1093/pubmed/fdaf030/8086986

Glennon, M. (2024). *Free speech and turbulent freedom: The dangerous allure of censorship in the digital era*. Oxford University Press.

Gomes, N., Pato, M., Lourenco, A., & Datia, N. (2023). A survey on wearable sensors for mental health monitoring. *Sensors (Basel, Switzerland),* 23(3), 1330. https://doi.org/10.3390/s23031330

Gordon, W., & Catalini, C. (2018). Blockchain technology for healthcare: Facilitating the transition to patient-driven interoperability. *Computational and Structural Biotechnology Journal, 16,* 224-230. https://doi.org/10.1016/j.csbj.2018.06.003

Hare, S. (2022). Technology is not neutral: A short guide to technology ethics. *London Publishing Partnership.*

Henderson, J. C., & Venkatraman, N. (1992). Strategic alignment: A framework for strategic information technology management. *IBM Systems Journal, 32* (1), 4-16.

Hiatt, J. M. (2006). *ADKAR: A model for change in business, government, and our community.* Prosci Research.

Hidefjäll, P., Laurell, H., Johansson, J., & Barlow, J. (2025). Institutional logics and the adoption and implementation of remote patient monitoring. *Innovation*, *27*(1), 96-115.

Islam, E., Hossain, S., & Hossain, A. (2025). *Diversify or Remain at Risk*. Mono Enterprise.

Johnson, C. E. (2021). *Meeting the ethical challenges of leadership* (7th ed.). Sage.

Khalil, R., Macdonald, J.C., Gustafson, A., Aljuburi, L., Bisordi, F., & Beakes-Read, G. (2023). Walking the talk in digital transformation of regulatory review. *Regulatory Science,* 10. https://doi.org/10.3389/fmed.2023.1233142

Khan, M. I., Naim, A., Khan, M. F., & Balqis, S. N. (2025). Leadership and Change Management for Sustainable Healthcare in the Digital Era. In *Fostering Economic Diversification and Sustainable Business Through Digital Intelligence* (pp. 257-282). IGI Global Scientific Publishing.

Khan, W. Z., Rehman, M. H. U., Zangoti, H. M., Afzal, M. K., Armi, N., & Salah, K. (2020). Industrial internet of things: Recent advances, enabling technologies, and open challenges. *Computers & Electrical Engineering*, *81*, 106522.

Kim, K.K., & Backonja, U. (2025). Digital health equity frameworks and key concepts: A scoping review. *Journal of the American Medical Informatics Association, 32*(5). https://academic.oup.com/jamia/article/32/5/932/8010284

Kotter, J. P. (1996). *Leading change*. Harvard Business Review Press.

Lemak, C. H., Pena, D., Jones, D., Kim, D. H., & Guptill, J. (2024). Leadership to accelerate healthcare's digital transformation: Evidence from 33 health systems. *Journal of Healthcare Management,* 69(4) 267-279. DOI: 10.1097/JHM-D-23-00210

Li, M. M., Rising, K. L., & Goldberg, E. M. (2022). Transitioning to telehealth? A guide to evaluating outcomes. *Health Policy and Technology*, *11*(3), 100623.

Luftman, J., Lyytinen, K., & Zvi, T. B. (2017). Enhancing the measurement of information technology (IT) business alignment and its influence on company performance. *Journal of Information Technology, 32* (1), 26-46. https://doi.org/10.1057/jit.2015.23

Ma, Y., Zhao, C., Zhao, Y., Lu, J., Jiang, H., Cao, Y., & Xu, Y. (2022). Telemedicine application in patients with chronic disease: A systematic review and meta-analysis. *BMC Medical Informatics and Decision Making, 22*(1), 105. https://doi.org/10.1186/s12911-022-01845-2

Machi, L. A., & McEvoy, B. T. (2022). *The literature review: 6 steps to success* (3rd ed.). Corwin Press.

Maddox T. M. (2024). Innovations in digital health to improve care delivery: the BJC Healthcare/Washington University School of Medicine Healthcare Innovation Lab. *Transactions of the American Clinical and Climatological Association*, *134*, 239–251.

Michelman, P. (2018, May 31). 2018-17 Closing the gap between strategy and execution. MIT Sloan CIO Symposium Videos. [Video]. YouTube. https://www.youtube.com/watch?v=cal2QpiZEDE

Mill, J.S. (1901). *On Liberty.* The Walter Scott Publishing Co., Ltd. https://www.gutenberg.org/files/34901/34901-h/34901-h.htm

Monash University (2025). *Student academic success: Structuring a literature review.* https://www.monash.edu/student-academic-success/excel-at-writing/how-to-write/literature-review/structuring-a-literature-review

Morrish, D., Zayat, N., & Hoskins, I. A. (2025). Use of telehealth as an adjunct to conventional mental health care. *Obstetrics and Gynecology Clinics*. https://doi.org/10.1016/j.ogc.2024.09.006

Petretto, D. R., Carrogu, G. P., Gaviano, L., Berti, R., Pinna, M., Petretto, A. D., & Pili, R. (2024). Telemedicine, e-health, and digital health equity: a scoping review. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, *20*, e17450179279732.

Reed, M. E., Huang, J., Graetz, I., Lee, C., Muelly, E., Kennedy, C., & Kim, E. (2020). Patient characteristics associated with choosing a telemedicine visit vs. office visit with the same primary care clinicians. *JAMA Network Open, 3*(6), e205873-e205873. https://doi.org/10.1001/jamanetworkopen.2020.5873

Rothwell, W. J., Ealy, P. L., & Campbell, J. (Eds.). (2022). *Rethinking organizational diversity, equity, and inclusion: A step-by-step guide for facilitating effective change.* CRC Press.

Rothwell, W.J. (2015). *Organization development fundamentals: managing strategic change.* ATD Press.

Russell, S., Norvig, P. (2020). *Artificial intelligence: A modern approach* (4th ed.). Pearson.

Saldanha, T. (2019). *Why digital transformations fail: The surprising disciplines of how to take off and stay ahead.* Berrett-Koehler Publishers, Inc.

Savoldelli, A., Vitali, A., Remuzzi, A., & Giudici, V. (2022). Improving the user experience of televisits and telemonitoring for heart failure patients in less than 6 months: A metholological approach. *International Journal of Medical Informatics, 161,* 104717. https://doi.org/10.1016/j.ijmedinf.2022.104717

Serrano, L. P., Maita, K. C., Avila, F. R., Torres-Guzman, R. A., Garcia, J. P., Eldaly, A. S., Haider, C. R., Felton, C. L., Paulson, M. R., Maniaci, M. J., & Forte, A. J. (2023). Benefits and challenges of remote patient monitoring as perceived by health care practitioners: A systematic review. *The Permanente Journal*, 27(4), 100–111. https://doi.org/10.7812/TPP/23.022

Stoumpos, A. I., Kitsios, F., & Talias, M. A. (2023). Digital transformation in healthcare: Technology acceptance and its applications. *International Journal of Environmental Research and Public Health*, *20*(4), 3407. https://doi.org/10.3390/ijerph20043407

Tan, S. H., Yap, Y. Y., Tan, S. K., & Wong, C. K. (2025). Determinants of Telehealth Adoption Among Older Adults: Cross-Sectional Survey Study. *JMIR Aging*, *8*(1), e60936.

Torous, J. (2025). Hybrid and virtual care: Interest outstrips infrastructure. *New England Journal of Medicine, Catalyst Innovative Care Delivery, 6*(2). https://catalyst.nejm.org/doi/abs/10.1056/CAT.25.0009

U.S. Department of Health and Human Services. (2023). *Health Information Privacy.* https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html

Vettriselvan, R. (2025). Harnessing Innovation and Digital Marketing in the Era of Industry 5.0: Resilient Healthcare SMEs. In *The Future of Small Business in Industry* 5.0 (pp. 163-186). IGI Global Scientific Publishing.

Vudathaneni, V. K. P., Lanke, R. B., Mudaliyar, M. C., Movva, K. V., Mounika Kalluri, L., & Boyapati, R. (2024). The Impact of Telemedicine and Remote Patient Monitoring on Healthcare Delivery: A Comprehensive Evaluation. *Cureus*, *16*(3), e55534. https://doi.org/10.7759/cureus.55534

Zamlynskyi, V., Kalinichenko, S., Kniazkova, V., Skrypnyk, N., & Avriata, A. (2025). Healthcare management using artificial intelligence. In *Revolutionizing Medical Systems using Artificial Intelligence* (pp. 1-24). Academic Press.

Zhang, L., Bullen, C., & Chen, J. (2025). Digital Health Innovations to Catalyze the Transition to Value-Based Health Care. *JMIR Medical Informatics*, *13*, e57385.

Zhu, D., Zhao, W. W., Wu, Q., & Zhang, X. (2025). (How) does digital transformation promote boundary-spanning strategies? Evidence from Chinese firms' unrelated diversification. *International Journal of Technology Management, 97*(2-3), 385-409.