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A data analytics driven digital supervision model for enhancing school counselors' competencies in the era of technological transformation

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Abstract

This study addresses the need to enhance school counselors' professional competencies through innovative supervision approaches in the era of digital transformation. The study aimed to develop and validate a data analytics-based digital supervision model for school counseling using a mixed-methods design. The quantitative phase involved 150 school counselors whose competencies were measured using a validated scale (Cronbach's $\alpha = .89$). Results showed a significant increase in competency scores from 3.45 (SD = 0.52) before the intervention to 4.21 (SD = 0.48) after the intervention, with a mean difference of 0.76. A paired-samples t-test indicated a statistically significant improvement, $t(149) = 12.34$, $p < .001$, with a large effect size (Cohen's $d = 1.29$). The qualitative phase included 30 semi-structured interviews with counselors, supervisors, and school principals. Findings revealed improvements in digital literacy, reflective practice, evidence-based decision-making, collaboration, and professional competence supported by real-time feedback. The integrated findings led to the development of a digital supervision framework incorporating data dashboards, predictive analytics, and adaptive feedback mechanisms. The results demonstrate that data-driven digital supervision effectively strengthens school counselors' competencies and supports continuous professional development in technology-enhanced educational environments.

Introduction

The rapid evolution of digital technologies has fundamentally reshaped educational supervision, particularly within school counseling contexts. Traditional supervision models that rely on face-to-face interaction, manual documentation, and static feedback systems are increasingly insufficient for addressing the complexities of digitally mediated counseling environments (Križanić et al., 2019; Tiwari & Fahrudin, 2024). Conversely, modern educational systems are rapidly shifting toward data-informed and AI-supported supervision frameworks driven by ongoing digital transformation (Xiong & Tsai, 2025; Wattanapanit, 2025; Khiyarusoleh, 2023).

A critical challenge emerges from the pronounced misalignment between conventional supervision approaches and the dynamic demands of contemporary digital counseling ecosystems. Traditional models lack the real-time analytics, predictive capabilities, and adaptive feedback mechanisms essential to current practice (Qin & Yang, 2025; Zacharis &

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Niros, 2026). Consequently, school counselors frequently encounter substantial barriers in sustaining competency development, fostering reflective practice, and maintaining collaborative engagement within increasingly intricate digital environments (Karwa, 2025; Napitu et al., 2026).

The broader paradigm of educational transformation underscores the accelerating integration of learning analytics, AI systems, and digital governance frameworks within school systems (Saidah & Muhid, 2025; Alanudin & Khaza'inullah, 2024). These developments accentuate the urgent need for robust supervision models capable of leveraging real-time data streams from diverse digital platforms such as Learning Management Systems (LMS), performance dashboards, and AI-based assessment tools to facilitate evidence-based decision-making (Zacharis & Niros, 2026; Chen, 2024).

Nevertheless, systematic reviews of recent literature indicate that the adoption of data-driven supervision frameworks remains fragmented and uneven. Extant studies across educational technology, AI analytics, and digital leadership reveal a significant lag in integrating predictive analytics into counseling supervision systems (Susanto, 2026; Etiyasningsih & Sundari, 2025). A deeper critical analysis of the current literature uncovers three profound research gaps that remain unaddressed.

First, while conceptual frameworks for AI and learning analytics continue to expand within general education (Xiong & Tsai, 2025), a critical empirical void persists regarding how these technologies can be safely and systematically deployed within the highly confidential, sensitive domain of school counseling. Current paradigms remain overwhelmingly confined to student academic metrics, thereby neglecting the evaluation of the counselor's clinical and reflective competencies.

Second, existing digital supervision instruments function predominantly as passive data aggregation utilities. These systems yield descriptive dashboards but lack validated predictive algorithms capable of diagnosing competency decay or operational divergence before such deficiencies adversely impact student outcomes (Qin & Yang, 2025; Susanto, 2026).

Third, there is a distinct dearth of empirical inquiry investigating the socio-technical dimensions specifically regarding the psychological safety, systemic trust, and adoption readiness of both supervisors and counselors when mandated to integrate automated AI feedback loops within high-stakes psychological environments.

To bridge these critical gaps, the present study develops and validates a data analytics driven digital supervision model tailored for school counselors. The proposed framework orchestrates the integration of concurrent data sources including counseling logs, student feedback metrics, and learning analytics dashboards with predictive modeling and adaptive feedback mechanisms (Pachori et al., 2026; Masiello et al., 2023). Moving beyond passive data tracking, this model is designed to actively transmute digital metrics into structured pedagogical interventions, thereby enhancing counselor competencies, fortifying reflective practice, and sharpening the precision of supervisory decisions (Saidah & Muhid, 2025; Yuangga, 2023).

The study is guided by three overarching research questions: (1) how can data analytics be systematically integrated into digital supervision architectures; (2) what factors influence the systemic adoption of data driven supervision tools; and (3) to what extent does analytics-based supervision impact counselor performance outcomes. In alignment with these objectives, the study tests the following hypotheses: (H1) analytics-driven supervision significantly improves counselor competencies; (H2) active engagement with digital supervision tools enhances counselor self-efficacy; and (H3) predictive analytics effectively diagnose competency gaps to inform targeted pedagogical interventions (Qin & Yang, 2025; Chen, 2024; Zacharis & Niros, 2026).

Ultimately, this study contributes to both theory and practice by advancing a scalable, data-driven supervision framework that directly reconciles the technical and empirical voids undermining prior literature. By synthesizing AI, learning analytics, and digital feedback mechanisms, the model optimizes professional counselor performance amidst the current era of educational digital transformation (Tiwari & Fahrudin, 2024; Wattanapanit, 2025; Karwa, 2025).

Methods

Design

This study adopted a convergent parallel mixed-methods design to develop and evaluate a data analytics driven digital supervision model for improving school counselors' competencies. Quantitative and qualitative data were collected concurrently, analyzed separately, and integrated during interpretation through joint displays and meta-inference synthesis (Creswell & Plano Clark, 2018; Fetters et al., 2013).

The digital supervision intervention was implemented through an online platform that provided real-time dashboards displaying competency progress, participation records, and supervision activities. The system utilized learning analytics to identify engagement patterns and generate adaptive feedback based on users' performance and activity data. Supervisors used these analytics reports to provide targeted guidance, monitor counselor development, and support reflective practice throughout the intervention period.

The quantitative component examined changes in counselor competencies, system engagement, and supervision effectiveness, whereas the qualitative component explored participant experiences, implementation challenges, ethical considerations, and contextual factors influencing the use of the digital supervision model. The integration of both datasets enabled a more comprehensive understanding of the model's effectiveness and practical applicability.

Participants

This study involved 150 school counselors from 30 public and private schools in Brebes Regency, Central Java, Indonesia. A total sampling technique was employed, whereby all school counselors who met the established inclusion criteria within the participating schools were included in the study. This approach was adopted to obtain a comprehensive understanding of the implementation of digital supervision and counselor competencies across different educational levels.

The participating schools consisted of 10 elementary schools, 10 junior high schools, and 10 senior high/vocational high schools. From these 30 schools, a total of 150 counselors were recruited, comprising 50 elementary school counselors, 50 junior high school counselors, and 50 senior high/vocational high school counselors. The distribution of counselors was not uniform across schools. Elementary schools generally employed one to two counselors, whereas junior and senior high schools typically employed between three and eight counselors due to larger student populations and more complex guidance and counseling service demands. Therefore, the inclusion of 150 counselors from 30 schools reflects a realistic representation of counseling personnel within the Indonesian educational context.

All participants successfully completed the study procedures and were included in the final quantitative analysis. To be eligible, participants were required to have at least one year of professional experience as a school counselor, actively provide guidance and counseling services during the study period, and regularly use digital technologies in their professional practice. Counselors who were on extended leave or failed to complete the research instruments were excluded from participation.

The diversity of participants across educational levels and school types enabled the study to capture variations in supervision practices, technology utilization, and organizational contexts. Detailed participant characteristics and school distribution are presented in Table 1.

Table 1. Participant Characteristics and School Distribution

Characteristic	Category	Number of Schools	n	%
Educational Level	Elementary Schools	10	50	33.3
	Junior High Schools	10	50	33.3
	Senior High/Vocational High Schools	10	50	33.3
School Type	Public Schools	17	85	56.7
	Private Schools	13	65	43.3
Total		30	150	100.0

Based on this distribution, the average number of counselors was approximately five per school. However, the actual distribution varied across educational levels. Elementary schools generally had fewer counselors, while junior and senior high schools employed larger numbers of counselors due to higher student enrollment and more diverse counseling service needs.

Instruments

The study employed a combination of quantitative and qualitative instruments to comprehensively examine the effectiveness of the digital supervision model in strengthening school counselors' competencies. Quantitative data were collected using the Standardized Counselor Competency Assessment (SCA), consisting of 30 items measured on a 5-point Likert scale with a reliability coefficient of Cronbach's alpha greater than 0.85. The instrument assessed key competency indicators, including professional counseling skills, digital literacy, communication effectiveness, ethical practice, and reflective supervision abilities. Examples of statements included: "I am able to integrate digital platforms effectively in counseling supervision" and "I can apply ethical principles when conducting online counseling services." In addition, the Supervisor-Rated Improvement Rubric (SRIR), comprising 10 items on a 7-point Likert scale ($\kappa = 0.78$), was used to evaluate counselors' professional growth based on supervisors' observations. The indicators measured included supervision responsiveness, problem-solving ability, collaboration, and improvement in counseling performance. An example item was: "The counselor demonstrates increased effectiveness in managing student counseling cases after digital supervision sessions." Digital supervision system logs were also analyzed to measure engagement indicators such as duration of supervision activities, frequency of participation, responsiveness, and interaction patterns within the digital platform.

Qualitative data were obtained through semi-structured interviews, focus group discussions, and observation checklists. The interview guides explored participants' perceptions, experiences, challenges, and perceived benefits of digital supervision practices. Sample interview questions included: "How has digital supervision influenced your counseling practices?" and "What challenges do you experience when using digital supervision platforms?" Observation checklists focused on indicators such as participant engagement, communication quality, technological adaptation, and collaborative interaction during supervision sessions. All instruments underwent rigorous validation procedures, including Content Validity Index (CVI > 0.80), Confirmatory Factor Analysis (CFA), and reliability testing with Cronbach's alpha values above 0.85 and Cohen's kappa coefficients above 0.75, indicating strong validity and reliability.

Procedure

The research procedure was carried out systematically in three sequential phases over a six-month period. In the first phase (pre-intervention phase), the researchers coordinated with

school principals and counseling supervisors to identify eligible participants based on the predetermined inclusion criteria. After obtaining informed consent, participants completed baseline assessments using the Standardized Counselor Competency Assessment (SCA) to measure their initial counseling competencies, digital literacy, communication skills, ethical practices, and supervision readiness. Initial semi-structured interviews were also conducted with selected counselors, supervisors, and school administrators to explore existing supervision practices, challenges in digital counseling implementation, and participants' expectations regarding digital supervision systems.

In the second phase (intervention phase), participants engaged in a six-month digital supervision program through a secure cloud-based supervision platform specifically designed for the study. The platform integrated several features, including real-time performance dashboards, predictive analytics, adaptive feedback systems, online mentoring sessions, and digital reflective journals. During this phase, counselors participated in scheduled online supervision meetings, uploaded counseling reports, received feedback from supervisors, and interacted through discussion forums and video conferencing tools. The system automatically recorded user engagement indicators, including login frequency, duration of participation, response rates, feedback interactions, and supervision activity patterns. Supervisors monitored counselors' progress continuously and provided personalized recommendations based on the platform's analytics outputs.

In the third phase (post-intervention phase), all participants completed post-test competency assessments using the same standardized instruments administered during the baseline stage to measure changes in counseling competencies after the intervention. Follow-up interviews and focus group discussions were conducted to evaluate participants' experiences, perceived benefits, challenges, and the overall effectiveness of the digital supervision model. Researchers also conducted structured observations of supervision activities using observation checklists to identify behavioral changes and levels of technological adaptation. All qualitative interviews were audio-recorded, transcribed verbatim, anonymized, and coded for thematic analysis.

To ensure data security and research integrity, all quantitative and qualitative data were collected through encrypted cloud-based systems with role-based access control, allowing access only to authorized researchers and supervisors. Ethical approval for the study was obtained from the Institutional Review Board (IRB), and all research procedures complied with international ethical standards, including General Data Protection Regulation (GDPR) requirements related to confidentiality, participant privacy, and secure data management.

Data Analysis

Quantitative data were analyzed using descriptive statistics (means and standard deviations) and paired-samples t-tests to examine changes in counselor competencies before and after the intervention. Because participants were nested within schools, multilevel modeling was employed to account for potential school-level effects and to assess changes over time. Structural Equation Modeling (SEM) was subsequently used to evaluate the proposed supervision model and examine the relationships among key variables, including dashboard engagement and competency development.

Qualitative data were analyzed through thematic analysis following Braun and Clarke (2006). Interview transcripts and observation notes were coded systematically to identify recurring themes related to participants' experiences, perceived benefits, and implementation challenges. Coding reliability was established through intercoder agreement, yielding Cohen's kappa values above 0.80.

To obtain a comprehensive understanding of the intervention, quantitative and qualitative findings were integrated using a joint-display approach. This process enabled comparison and

triangulation across data sources, generating meta-inferences regarding the effectiveness of the data analytics–driven digital supervision model in enhancing counselor competencies.

Results

Quantitative Findings

The study involved 150 school counselors, all of whom successfully completed the digital supervision program and were included in the final analysis (N = 150). Data screening revealed no missing values; therefore, all responses were analyzed without the need for data imputation procedures. The research instrument demonstrated excellent reliability, with a Cronbach's alpha coefficient of 0.89.

Descriptive analysis indicated a substantial improvement in counselors' competency scores following participation in the data analytics-based digital supervision intervention. The mean competency score increased from 3.45 (SD = 0.52) at the pre-intervention stage to 4.21 (SD = 0.48) at the post-intervention stage. The mean difference of 0.76 suggests a meaningful improvement in counselor competencies after the implementation of the digital supervision model.

A paired-samples t-test confirmed that the increase was statistically significant, $t(149) = 12.34$, $p < .001$. The effect size was large (Cohen's $d = 1.29$), indicating that the intervention had a substantial practical impact on the professional competencies of school counselors.

Table 2. Comparison of Counselor Competency Scores Before and After the Intervention (N = 150)

Variable	Pre-test Mean (SD)	Post-test Mean (SD)	Mean Difference	95% CI	t	df	p	Cohen's d
Counselor Competency	3.45 (0.52)	4.21 (0.48)	0.76	0.64–0.88	12.34	149	< .001	1.29

These findings indicate that the data analytics-based digital supervision model significantly enhanced school counselors' competencies. The large effect size suggests that the observed improvement was not only statistically significant but also educationally and professionally meaningful.

Structural Equation Modeling (SEM) Results

Structural Equation Modeling (SEM) was conducted to examine the relationship between engagement with the digital supervision system and the development of counselor competencies. The results demonstrated that the proposed model achieved an acceptable level of fit across all major goodness-of-fit indices.

Table 3. Structural Equation Modeling (SEM) Results

Indicator	Value	Interpretation
CFI	0.95	Good Fit
TLI	0.93	Good Fit
RMSEA	0.045	Excellent Fit
SRMR	0.038	Excellent Fit
Dashboard Engagement → Counselor Competency	$\beta = 0.65$, $p < .001$	Significant

The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) exceeded the recommended threshold of 0.90, while the Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) remained below the

recommended cutoff value of 0.08. These results indicate that the proposed model adequately fits the empirical data.

Furthermore, dashboard engagement was found to be a positive and statistically significant predictor of counselor competency ($\beta = 0.65$, $p < .001$). This finding suggests that counselors who engaged more actively with the digital supervision dashboard experienced greater improvements in their professional competencies. In other words, meaningful interaction with the system played a critical role in maximizing the benefits of the digital supervision model.

Qualitative Findings: Themes and Narrative Evidence

Qualitative data were collected through semi-structured interviews with 30 participants who were purposively selected to represent diverse perspectives on the implementation of digital supervision. The participants consisted of 20 school counselors, 5 guidance and counseling supervisors, and 5 school principals. Participant selection considered variations in educational level, school type, professional experience, and involvement in the implementation of digital supervision. Data collection continued until thematic saturation was achieved, meaning that no substantially new information or themes emerged from additional interviews.

To enhance the credibility of the findings, member checking was conducted by inviting participants to review summaries of the interview results. In addition, data triangulation was performed by comparing information obtained from interviews, observations, and institutional documents related to the implementation of digital supervision. To ensure confidentiality, all participant identities were anonymized. Consequently, direct quotations are presented using identification codes such as K-07 (Counselor), S-03 (Supervisor), and SP-02 (School Principal).

Thematic analysis revealed three major themes that consistently emerged across participant groups.

1. Positive Perceptions of Digital Supervision

Most participants perceived digital supervision as a valuable tool for supporting their professional responsibilities. The real-time dashboard was considered particularly useful for monitoring performance, identifying areas requiring improvement, and engaging in reflective practice. Immediate access to performance-related information also facilitated evaluation and decision-making processes.

> "The dashboard helps me identify my strengths and weaknesses instantly, allowing me to improve my counseling services more quickly." (K-07)

This finding suggests that digital supervision functions not only as a monitoring mechanism but also as a learning tool that supports continuous professional development.

2. Implementation Challenges and Supporting Factors

Although digital supervision was generally well received, several participants reported challenges during the early stages of implementation. The most frequently mentioned barriers included limited technological infrastructure, differences in digital literacy levels, and the time required to adapt to the new system.

However, these challenges were gradually reduced through regular training, technical assistance, and support from both school administrators and supervisors. Institutional support emerged as a critical factor in increasing users' confidence and facilitating effective use of the digital supervision system.

> "Initially, some counselors struggled to use the system, but after receiving training and mentoring, they became more confident and were able to utilize its features effectively." (S-03)

These findings indicate that the successful implementation of digital supervision depends not only on the quality of the technology itself but also on human resource readiness and organizational support.

3. Enhancement of Professional Competence

The third theme highlights the contribution of digital supervision to the development of counselors' professional competencies. Participants reported improvements in their ability to use data for planning, implementing, and evaluating counseling services. They also described increased professional confidence, greater reflective awareness, and stronger collaboration with colleagues.

Furthermore, clear procedures for data management and privacy protection enhanced participants' trust in the system. As a result, they became more willing to utilize data as a basis for professional decision-making.

> "The available data help me make evidence-based decisions rather than relying on assumptions. In addition, communication and collaboration with colleagues have improved significantly." (K-12)

These findings suggest that data-driven supervision promotes more reflective, adaptive, and accountable professional practices among school counselors.

Summary of Qualitative Findings

Overall, the qualitative findings indicate that data analytics-based digital supervision contributes to the enhancement of reflective practice, professional confidence, collaboration, and evidence-based decision-making. These findings complement and strengthen the quantitative results, which demonstrated significant improvements in counselor competencies following the implementation of the digital supervision model.

Discussion

The findings suggest that data analytics-based digital supervision can effectively enhance school counselors' competencies by providing timely, measurable, and continuous feedback. The significant improvement in competency scores indicates that supervision has evolved beyond a monitoring function into a professional learning process that supports ongoing competency development.

In the context of school counseling, competency gains were evident in counselors' ability to conduct systematic student needs assessments, plan evidence-based counseling programs, and make more informed professional decisions. Real-time access to service data, student characteristics, and intervention outcomes enabled counselors to identify students' needs more accurately and develop responsive counseling services. These findings support previous research highlighting the role of data analytics in improving educational and counseling decision-making (Brass et al., 2023; Tzimas & Demetriadis, 2024).

The qualitative findings further demonstrated that digital supervision promotes reflective practice by encouraging counselors to evaluate their performance, identify areas for improvement, and refine their counseling approaches. Consistent with earlier studies, analytics-enhanced feedback appears to strengthen professional reflection and feedback literacy (Jin et al., 2024; van der Linden et al., 2023).

Improvements were also observed in counseling documentation, service evaluation, and digital counseling ethics. The system enabled more systematic record-keeping, efficient case management, objective program evaluation, and greater awareness of data security and student confidentiality. These competencies are increasingly important in contemporary counseling practice.

The findings also emphasize the importance of institutional support. Training, mentoring, technical assistance, and leadership commitment played a crucial role in facilitating successful implementation. This suggests that competency development results from the interaction between technology, organizational support, and active counselor engagement rather than technology alone.

Nevertheless, the observed improvements may also have been influenced by factors such as professional experience, motivation, supervision intensity, mentoring quality, principal support, and prior digital skills. Therefore, digital supervision should be viewed as one component of a broader professional development ecosystem.

Overall, data analytics-based digital supervision represents a promising strategy for strengthening school counselors' competencies, particularly in student needs assessment, counseling program planning, documentation, evaluation, digital ethics, and reflective practice. These findings provide empirical support for integrating technology-enhanced supervision into school counseling systems to promote continuous professional development and improve service quality in the digital era.

Implications

The findings have important implications for the scientific development of digital supervision and educational counseling by demonstrating that data analytics can strengthen counselors' competencies through reflective and evidence-based professional practices. The study highlights the importance of integrating user-friendly real time dashboards, predictive analytics, and continuous training in data literacy, ethics, and technical skills to support competency development in technology-driven educational settings. The significant competency improvement and high engagement levels suggest that data-informed supervision can serve as an effective framework for enhancing professional learning and adaptive supervision models.

From a scientific perspective, the study also contributes to the growing literature on digital supervision, learning analytics, and technology-enhanced professional development by emphasizing the role of ethical data governance, system usability, and organizational readiness. The identified implementation indicators, such as competency improvement, dashboard engagement, ethical compliance, and training completion, provide measurable benchmarks for future research and institutional evaluation. Furthermore, the phased implementation model consisting of pilot testing, system expansion, and continuous evaluation offers a scalable framework that can be adapted across diverse educational contexts.

The findings further suggest that successful implementation depends not only on technological infrastructure but also on institutional support, user acceptance, and equitable access to digital resources. Potential barriers, including resistance to change, privacy concerns, and limited technical expertise, indicate the need for sustainable professional development and strong policy support. Overall, this study strengthens the scientific understanding of how data-driven supervision can improve counselor competencies while providing a foundation for future research on long-term effectiveness, scalability, and digital transformation in educational supervision.

Limitations and Future Directions

This study has several limitations. Although the intervention was implemented over a six-month period, post-intervention evaluation was conducted within a relatively short timeframe, limiting conclusions about long-term sustainability. In addition, the sample size was confined to school counselors from a single region, which may restrict the generalizability of the findings. The use of self-reported measures may also introduce response bias, while the competency instrument may not fully capture broader professional and interpersonal skills. Furthermore, the effectiveness of the model may vary depending on institutional readiness, technological infrastructure, and participants' levels of digital literacy.

From an ethical perspective, the use of data analytics in supervision requires careful attention to privacy, confidentiality, informed consent, and data security. Measures such as anonymization, encryption, and transparent data-management procedures are essential to protect participants. In addition, predictive algorithms should be regularly monitored to minimize potential bias and ensure fairness in decision-making. Digital supervision should therefore complement, rather than replace, professional judgment and human interaction within the supervision process.

Future research should examine the effectiveness of the model in different educational contexts using more rigorous research designs and longer follow-up periods. Longitudinal studies are needed to determine whether improvements in competency, reflective practice, and professional confidence can be sustained over time. Further investigations may also explore cost-effectiveness, cross-context applicability, and institutional factors that influence successful implementation. Such efforts will contribute to the development of digital supervision models that are effective, ethical, and scalable across diverse educational settings.

Conclusion

The findings suggest that the data analytics–driven digital supervision model has the potential to support the development of school counselors' competencies in technology-based educational settings. The integration of real-time dashboards and learning analytics appears to facilitate reflective practice, professional confidence, collaboration, and more personalized supervision experiences. The results also indicate that active engagement with digital supervision tools may contribute to competency improvement and help identify professional development needs more efficiently.

However, these findings should be interpreted with caution given the study's design limitations, including the regional sample, reliance on self-reported measures, and limited evaluation period. In addition, the effectiveness of the model may be influenced by contextual factors such as institutional support, digital literacy, and technological readiness. Overall, the study provides preliminary evidence that data-driven digital supervision can be a promising approach for strengthening counselor professional development, while further research is needed to confirm its effectiveness across broader contexts and longer timeframes.

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Author Contribution Statement

Author 1 contributed to the conception and design of the study, supervision of the research process, and manuscript preparation. Author 2 was responsible for data collection, implementation of the digital supervision intervention, and participant coordination. Author 3 conducted quantitative and qualitative data analysis, interpreted the findings, and contributed to manuscript revision and final approval. All authors approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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