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## Effectiveness of Digital-Based Islamic Religious Education in Society 5.0

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## Abstract

This study aims to examine the effectiveness of digital based Islamic Religious Education learning in the Society 5.0 era through a case study at MTs Al Falah Jatirokeh. Digital learning is implemented using platforms such as Google Classroom, Zoom, YouTube, and other interactive media to deliver Islamic material visually and contextually. The study used a qualitative approach with a case study method. Data collection techniques included observation, in depth interviews, and documentation. The results show that the effectiveness of digital learning is greatly influenced by teacher and student readiness, the use of appropriate technological media, and active student participation. Teachers who master digital pedagogy have been shown to improve students' understanding of abstract materials such as monotheism and morals through visual media. Generation Z students have shown a positive response to flexible and interactive learning. However, challenges remain, such as limited devices and stable internet access. Therefore, support from madrasah and government policies is needed to equitably distribute facilities and provide digital literacy training. Digital based Islamic Education learning has been proven to make a positive contribution to the quality of Islamic education which is more adaptive, innovative, and relevant in the digital era.

## Keywords

Digital Learning, Effectiveness, Islamic Religious Education, MTs, Society 5.0.

## 1. Introduction

The rapid development of digital technology in the Society 5.0 era marks a new chapter in human life that prioritizes the integration of artificial intelligence and human capabilities in solving various social problems. This era not only emphasizes technological progress, but also how technology can provide added value in people's lives, including in the world of education (Fukuyama, 2018; Hassan, 2020). Unlike the previous era (Society 4.0) which focused on digitalization and the industrial revolution, Society 5.0 places humans at the center of innovation with the aim of creating a balance between technological progress and human needs holistically. Furthermore, the role of teachers as one of the determining factors for the success of educational goals is required to have performance that is able to realize the hopes and desires of all parties, especially the general public who have trusted schools to educate students. Teacher performance is the result of teachers' work in carrying out their duties and responsibilities according to their competencies as teachers, both quantitatively and qualitatively, in order to achieve educational goals (Ningrat, 2020).

In the world of education, especially in Indonesia, digitalization presents both challenges and opportunities. Changing learning styles among the younger generation, more open access to information, and the need for digital literacy require teachers to transform their teaching methods. This also applies to Islamic Religious Education (*Pendidikan Agama Islam/PAI*) subjects, which have tended to be taught conventionally. Yet, PAI plays a central role in shaping students' character, morals, and spiritual values, which are crucial amidst current information disruption and social change (Mujib, 2021; Aini & Assegaf, 2021). However, the challenges in implementing digital based PAI learning are not simple. Many teachers still lack skills in utilizing digital media, limited facilities, and minimal development of technology based religious content. Furthermore, the perception that PAI is only suitable for face-to-face teaching is also a barrier (Sofyan, 2022).

MTs Al Falah Jatirokeh, as a secondary Islamic educational institution, has attempted to implement digital based learning in PAI. This implementation includes the use of interactive learning media, digital platforms, and the integration of Islamic values into the virtual world, which can effectively support learning at the madrasah (Ardana et al., 2015; Syahrijar et al., 2023; Nurhayati, 2024). Several previous studies by Hidayati (2021) found that the use of the Google Classroom application in PAI learning can increase student participation and strengthen teacher-student interactions. Meanwhile, a study by Rahman and Latifah (2022) showed that interactive video-based PAI learning is more effective in developing understanding of Islamic *Aqidah* concepts in madrasah students. However, there is still little research that focuses on a comprehensive evaluation of the effectiveness of digital PAI learning at the madrasah level using an in-depth qualitative approach. Therefore, this study attempts to fill this gap through a case study at MTs Al Falah Jatirokeh. This study aims to assess the effectiveness of digital-based PAI learning in the Society 5.0 era through a case study at MTs Al Falah Jatirokeh. The main focus of this research includes teacher strategies in implementing digital technology, student engagement in the learning process, and its impact on students' understanding and attitudes towards religion. This research is expected to provide theoretical contributions to the development of PAI learning in the digital era and offer practical recommendations for madrasah administrators and educators.

## **2. Literature Review**

### **2.1. The Era of Society 5.0 and its Implications for Education**

The realization of Society 5.0 aims to create a society that can solve various social challenges by incorporating innovations from the Industrial Revolution 4.0, such as the Internet of Things, big data, Artificial Intelligence (AI), robots, and the sharing economy, into every aspect of industry and social life. This concept not only focuses on technological development but also prioritizes the use of technology to improve the quality of human life. Therefore, according to Faqihuddin and Muflih (2024), future societies will be able to create new values and services in a sustainable manner, thereby making human life more harmonious, just, and sustainable. This is what is called Society 5.0, a super-intelligent and human-centered society. Japan is a pioneering country that systematically and purposefully introduces and implements this concept, as stated in the 5th Basic Plan for Science and Technology.

According to Harahap et al. (2023), the application of this concept has broad implications, including in the education sector. Indonesian education must be able to adapt and keep up with these rapid developments. According to Zarkasyi et al. (2024), every element of the education system curriculum, learning methods, teaching staff, digital infrastructure, and even learning culture needs to innovate to stay ahead. Education can no longer rely solely on conventional methods; it must embrace the use of digital technology, develop 21st-century competencies, and instill digital literacy and technological ethics from an early age. Without this transformation, Indonesian students will be left behind in education, both in terms of technological mastery, critical thinking, and readiness to face global challenges (Patimah & Nasywa, 2025). Within the framework of Society 5.0, education is a crucial foundation for producing a generation capable of adaptive, creative, and solution-oriented thinking to address the complex problems of modern society. Therefore, it is crucial for the government, educational institutions, and all stakeholders to jointly encourage innovation and collaboration to create a resilient and relevant education system in the ever-evolving digital era.

### **2.2. Digital Learning in Islamic Religious Education**

Digital learning refers to a learning process that utilizes information and communication technology, whether online, offline, or blended learning (Campbell, 2020). In the context of PAI, digital learning encompasses the use of various platforms such as Learning Management Systems (LMS), instructional videos, interactive quizzes, and educational social media to deliver Islamic material in a more engaging and accessible manner. This use of technology provides a new alternative to the PAI learning process, which was previously largely conducted conventionally and face-to-face. According to Mujib (2021), digital-based PAI learning is considered capable of increasing student interest in learning and providing flexibility in accessing materials anytime and anywhere. This is certainly a solution to overcome limitations of space and time, especially amidst global challenges such as the pandemic or limited teaching resources. Furthermore, digital media allows for a diversification of material delivery methods, such as the use of animations to explain the stories of the prophets, interactive videos to understand worship procedures, or online discussion forums that can foster critical thinking about religious issues.

However, the implementation of digital learning in PAI also faces several challenges. Sofyan (2022) noted that many students and teachers still experience limitations in digital literacy, both in terms of technological mastery and the ability to select appropriate Islamic content. Furthermore, the lack of visually appealing Islamic content is a barrier to maintaining student enthusiasm. The risk of shallow religious understanding also increases if teacher guidance is not carried out optimally, as religious learning requires an appreciation of values and depth of meaning, not just information (Nasaruddin & Ladiqi, 2023; Ruswandi et al., 2023).

Thus, although digital learning in PAI offers significant opportunities for modernizing religious education, a balanced approach between technology and character development remains essential to ensure the comprehensive and profound instillation of Islamic values.

### **2.3. The Concept of Effectiveness in Learning**

Learning effectiveness is defined as the extent to which learning objectives are optimally achieved, both from a cognitive, affective, and psychomotor perspective (Arikunto, 2019). In education, effectiveness is not only measured by the timely delivery of material, but also by the extent to which students are able to understand, internalize, and apply the knowledge gained in real life. Therefore, indicators of learning effectiveness are important to consider, including: clarity of objectives and material presented, the appropriateness of the methods and media used, active student involvement in the learning process, students' ability to understand and apply the material contextually, and an increase in attitudes, knowledge, or skills after the learning process has taken place (Sudjana, 2010). In the context of digital learning, effectiveness is strongly influenced by various factors not found in conventional learning. Nugroho et al. (2021) explain that the success of digital learning depends heavily on the interactivity of the media used, the accessibility of technology by students, and the active involvement of teachers in assisting students in the learning process.

Media interactivity allows students to be more engaged through features like interactive videos, simulations, and online quizzes, which encourage deeper understanding. However, technology accessibility presents a challenge, especially for students in areas with limited network access or digital devices (Tennyson et al., 1981). Furthermore, the role of teachers is key to ensuring the effectiveness of digital learning. Without adequate support, students can struggle to understand the material or lose motivation to learn. Therefore, effective digital learning requires the integration of sound lesson planning, appropriate media selection, and support strategies that are responsive to student needs. With this holistic approach, learning effectiveness, both online and offline, can be achieved optimally and sustainably.

## **3. Methods**

This research uses a qualitative approach with a case study type. The case study approach was chosen in this research because it was considered most appropriate to reveal in depth the process, strategies, and effectiveness of digital-based PAI learning in a real context at MTs Al Falah Jatirokeh. Through this approach, researchers can explore educational phenomena comprehensively in a natural setting, while simultaneously capturing the dynamics of the implementation of digital learning that is unique and contextual in the educational institution's environment. Case studies provide space for a rich and comprehensive understanding of educational practices that are not only textual, but also reflect the interaction between actors, technology, and local values in the PAI learning process. The research location is MTs Al Falah Jatirokeh, a junior high school that has initiated the use of technology in PAI learning. This research was conducted from January to April 2025. This relatively long time period aims to provide space for in-depth observation of the learning dynamics and the responses of various parties to the implementation of digital methods.

The subjects in this study included Islamic Religious Education teachers, seventh-grade students, the madrasah principal, and the vice principal of the madrasah for curriculum. Informants were selected through purposive sampling, a deliberate selection of individuals deemed to possess in-depth experience and knowledge of PAI digital learning practices (Sugiyono, 2017). This technique is considered appropriate for gathering rich and relevant information from those

directly involved in teaching and learning activities. Data were collected using three main techniques: observation, interviews, and documentation. Observations were conducted by directly observing the digital-based PAI learning process, including the use of digital media, student participation, and teacher-student interactions. In-depth interviews were conducted with key informants to obtain subjective narratives regarding experiences, challenges, and strategies in implementing digital learning. Meanwhile, documentation was used to support and complement the data, including lesson plans (*Rencana Pelaksanaan Pembelajaran/RPP*), digital learning media, student assessment results, and internal madrasah policies related to the digitalization of learning. With this combination of diverse and structured data collection techniques, it is hoped that the research results can depict reality validly and make a real contribution to the development of effective digital-based PAI learning strategies in the Society 5.0 era.

## **4. Results**

### **4.1. Teacher and Student Readiness for Digital Learning**

Teacher and student readiness is a crucial factor in determining the effectiveness of the learning process, particularly in PAI subjects in madrasahs. At MTs Al Falah Jatirokeh, this readiness is a key pillar in realizing optimal digital-based learning. Teachers are not only required to master religious material, but also must be able to utilize technology such as online learning platforms, interactive media, and various digital applications to support the teaching process. Without adequate digital competency, material delivery tends to be suboptimal and has the potential to reduce the quality of student learning outcomes. Meanwhile, student readiness to accept digital learning is also crucial (Hung, 2016). This readiness includes the ability to operate digital devices, manage study time independently, and have access to adequate facilities and infrastructure such as gadgets or tablets and a stable internet connection. Inequality in terms of devices or networks can be a significant barrier, especially for students from lower-middle economic backgrounds. Teacher and student readiness must be built simultaneously through digital literacy training, infrastructure improvements, and policy support from madrasahs. With thorough preparation, the PAI learning process will not only run smoothly, but will also be able to provide a learning experience that is more interesting, relevant, and in line with the demands of the Society 5.0 era (Mirke et al., 2019).

An interview with an PAI teacher at MTs Al Falah Jatirokeh revealed that most teachers have a basic understanding of the use of various digital media to support the learning process. These include Google Classroom as the primary platform for delivering materials and assignments, WhatsApp Groups for communication and discussion, and zoom for online face-to-face sessions. Mastery of these media demonstrates teachers' active efforts to adapt to the demands of digital-based learning in the Society 5.0 era. Students demonstrate considerable enthusiasm for digital learning, especially when teachers use interactive and engaging methods. Presenting materials in the form of animated videos or online quizzes is considered effective in increasing student engagement and motivation (Hasyim et al., 2024). This demonstrates that digital approaches not only effectively deliver materials but also strengthen the emotional connection between students and the religious learning materials. Some students still face challenges in terms of the availability of devices such as tablets or smartphones, as well as stable internet access. This creates gaps in material retention and active participation in class. Therefore, there needs to be a compensation strategy and support policy from madrasahs to prevent inequality in the digital-based teaching and learning process.

The readiness of human resources, particularly teachers, is a crucial early indicator for the successful implementation of digital-based learning. In the era of

Society 5.0, educational success is determined not only by the availability of technology but also by the extent to which individuals involved in the learning process are able to access, understand, and utilize that technology optimally. According to Sudrajat (2021), teacher readiness in using technology directly influences the quality of learning. This means that teachers with strong digital competencies will be better able to design, implement, and evaluate learning processes that are relevant to the needs of the times. At MTs Al Falah Jatirokeh, teacher readiness in integrating technology into PAI learning is a crucial pillar in creating effective and meaningful learning. Teachers are required not only to master religious material but also to be able to operate various digital platforms such as Google Classroom, Zoom, and other interactive media. This competency needs to be supported by ongoing training so that teachers not only keep up with technological developments but also are able to optimize them in a pedagogical context. Furthermore, student readiness is also an integral part of human resource readiness. Students who are accustomed to using technology wisely will more easily adapt to the digital learning process.

#### **4.2. Challenges in Islamic Education Learning in the Era of Society 5.0**

Observations at the Al Falah Middle School (MTs) in Jatirokeh indicate that the school has actively utilized various digital platforms in its teaching and learning activities, particularly in PAI (Zamroni & Wakidi, 2023; Hasanah, 2024). The use of digital platforms is a key strategy in responding to the challenges of education in the Society 5.0 era, which demands integration between technology and the learning process. Some of the platforms used include Google Classroom, which serves as the primary means for delivering materials, uploading assignments, and providing feedback to students. This platform makes it easier for teachers to organize learning materials in a structured manner and supports regular academic interactions between teachers and students. Furthermore, YouTube and Canva are also utilized to present learning content in the form of visually appealing videos and presentation media (Hasanah et al., 2023). This aims to increase student attention and clarify abstract Islamic concepts through visualization. To support direct and real-time communication, the school uses Zoom and Google Meet as online meeting media. The use of this application allows direct interaction between teachers and students, even when they are not physically present, and provides space for two-way discussion and explanation of material (Zaer & Misra, 2025). The use of this technology demonstrates the readiness of madrasas to undertake digital transformation and serves as concrete evidence that technological innovation can be effectively integrated into PAI learning to improve the quality of adaptive and modern education.

According to Wahyudi & Lestari (2022), the use of learning technologies such as visual and interactive media has been proven to increase students' attention and motivation to learn. These media provide a more engaging, less monotonous learning experience and can bridge the gap in understanding, especially in abstract materials such as in PAI. Visualizing religious concepts through animated videos, infographics, or digital simulations allows students to more easily understand and internalize Islamic values contextually. The importance of using appropriate media is also closely related to the characteristics of Generation Z, a generation born and raised amidst the development of digital technology. According to Putra & Prasetyo (2023), Generation Z tends to be more adaptive, responsive, and enthusiastic about digital-based learning. They are accustomed to accessing information via the internet, using digital devices in their daily lives, and have a more visual, fast-paced, and interactive learning style. Therefore, conventional, one-way learning approaches are no longer relevant if applied predominantly to this generation. In the context of MTs Al Falah Jatirokeh, the use of learning technologies such as videos, interactive quizzes, and digital-based presentations has been highly effective in

increasing student participation. The alignment of learning methods with the characteristics of Generation Z is key to creating a dynamic, enjoyable, and spiritually meaningful learning environment. This also demonstrates that digital transformation in PAI is a strategic step to address the needs of today's generation.

Although the use of technology in learning at MTs Al Falah Jatirokeh has been successful, significant obstacles remain. Some students face challenges in the form of damaged digital devices, such as gadgets or tablets, that they use for learning. Furthermore, unstable internet access, particularly in areas with inadequate network infrastructure, is a major barrier to smooth online learning interactions (Dinana et al., 2024). Limitations are not limited to students; some teachers also experience limitations, particularly in terms of formal understanding of learning technology. Some teachers struggle to optimally operate digital applications or platforms due to a lack of adequate training (Kesuma et al., 2025; Muna et al., 2025). This impacts the effectiveness of material delivery and the utilization of digital media, which should optimally support the learning process. These conditions reflect the existence of a digital divide in education. According to Nuryana and Ramadhani (2021), this digital divide is one of the major challenges facing the technology-based education system in Indonesia. Inequality in device ownership, internet access, and digital literacy between one student or teacher and another can hinder the equal distribution of quality education.

#### **4.3. Effectiveness of Islamic Education Digital Learning**

The effectiveness of digital learning can be measured through several key indicators that reflect the success of the overall learning process. These include increased student participation in class, learning independence, material understanding, and the quality of teacher-student interactions. At MTs Al Falah Jatirokeh, the implementation of digital-based PAI learning has demonstrated a number of positive outcomes in these aspects. Student participation has increased, particularly in actively accessing materials through platforms like Google Classroom, as well as in more timely assignment submissions (Ansyah, 2022). This demonstrates that the use of digital media can facilitate students' direct involvement in the learning process. Learning independence also develops, as students are encouraged to seek information, understand the material independently, and utilize other digital learning resources outside the virtual classroom. Material understanding has improved thanks to the use of visual media such as learning videos and interactive quizzes that help students grasp abstract concepts in PAI lessons (Khosyini & Khoiri, 2024). These media make the material more concrete, engaging, and understandable. Interactions between teachers and students have also become more dynamic. Through online discussion forums, comments within learning platforms, and virtual meetings, teachers can provide direct feedback and answer student questions effectively.

Based on the results of the learning evaluation in grade VII of MTs Al Falah Jatirokeh, a significant increase in student activeness was observed during the digital learning process. Students became more disciplined in accessing materials shared through digital platforms such as Google Classroom and were more consistent in submitting assignments on time. This reflects that digital-based learning is able to encourage more active student responsibility and engagement compared to conventional methods (Hafizah & Januardi, 2025). This improvement is inseparable from the use of relevant and engaging learning media, particularly the use of learning videos. Teachers stated that delivering material through videos significantly helped students understand abstract concepts in PAI, such as the values of monotheism, morals, or Islamic history. The visual and narrative nature of videos makes learning livelier, facilitates understanding, and reduces student boredom in receiving the material. Video media also allows teachers to explain complex material in a more systematic and structured manner, while also providing space for students

to replay the content as needed. Thus, students are not merely passive recipients but can independently regulate their own learning rhythm. These findings indicate that appropriate digital learning strategies, especially those utilizing audiovisual media, can improve the quality of Islamic Religious Education learning and create more effective and meaningful learning experiences for students.

Teachers' understanding of digital pedagogy is a key factor in the successful implementation of technology-based learning. According to Hermansyah (2022), the effectiveness of digital learning is greatly influenced by three main components: supporting facilities, teachers' understanding of digital pedagogy, and active student engagement. These three aspects are interrelated and serve as the main foundation for creating an adaptive and meaningful learning environment in the digital era, particularly in the context of PAI. Supporting facilities include the availability of technological devices such as laptops, tablets, or smartphones, as well as stable internet access. At MTs Al Falah Jatirokeh, limited facilities are a major challenge, especially for students from families with limited economic conditions. Without adequate facilities, the learning process is hampered and student participation is suboptimal (Hermansyah, 2022; Wahyudi & Lestari, 2022). Teachers are not only required to master the technical use of platforms like Google Classroom or Zoom, but also need to understand effective digital learning strategies, such as project-based learning, the use of interactive media, and technology-based evaluation. Active student engagement is a direct indicator of learning success. When students are actively involved in online discussions, assignment submissions, and the use of digital materials, learning objectives tend to be more easily achieved. The combination of teacher preparedness, technological support, and strong student participation will foster an effective, participatory learning process that is aligned with the challenges of Society 5.0.

## 5. Discussion

Research conducted at MTs Al Falah Jatirokeh shows that the effectiveness of digital-based PAI learning in the madrasah context is largely determined by the readiness of human resources, the appropriate use of technology, and student response to the applied learning methods. Teacher and student readiness to accept and implement digital learning forms the initial foundation for creating an effective and relevant learning process to meet the demands of the Society 5.0 era. Most teachers at MTs Al Falah Jatirokeh have demonstrated the ability to integrate technology into learning. Platforms such as Google Classroom, WhatsApp Group, Zoom, and YouTube are used as a means of delivering material and interacting with learning (Buluma & Walimbwa, 2021). This aligns with Sudrajat (2021) opinion, which emphasizes that teacher readiness to master technology will significantly impact the quality of digital learning. However, differences in the level of technology mastery among teachers, especially those with more senior backgrounds, remain a challenge that needs to be addressed through ongoing digital literacy training.

From a student perspective, enthusiasm for digital learning appears high, especially when learning media is presented in interactive and visual formats, such as animated videos and online quizzes. This aligns with the characteristics of Generation Z, who prefer fast, visual, and flexible learning (Putra & Prasetyo, 2023). However, technical constraints such as limited digital devices and unstable internet connections remain major obstacles, as explained by Nuryana and Ramadhani (2021) in their concept of the digital divide, which remains a major challenge in Indonesian education. The use of appropriate technological media is a supporting factor for successful PAI learning (Liu et al., 2022). Learning videos, Canva, and YouTube are used to present abstract material such as the values of monotheism and morality in a more engaging and easy-to-understand manner. The Zoom and Google Meet platforms facilitate two-way interaction between teachers and students. According

to Wahyudi and Lestari (2022), interactive and visual media can increase student motivation and attention, as demonstrated at MTs Al Falah Jatirokeh.

The effectiveness of digital learning in this madrasah can be observed from several important indicators: increased student participation in digital classes, the development of independent learning, better understanding of material through visual media, and dynamic interactions between teachers and students (Giang & Khanhr, 2023). Data from documentation and learning evaluations indicate that seventh-grade students are more disciplined in accessing materials and completing assignments. Teachers also reported that learning videos help students understand conceptual material more effectively. Technical constraints such as limited devices and internet access are major challenges, as stated in a study by Nuryana and Ramadhani (2021). However, they do not completely hinder the learning process due to the flexibility and creativity in the use of digital media. Teachers are required not only to understand technology but also to master digital pedagogy, namely the ability to design relevant and meaningful online learning. Hermansyah (2022) stated that the effectiveness of digital learning is closely related to teachers' understanding of digital pedagogy, infrastructure support, and active student participation. When these three aspects work together, the learning process can proceed optimally and adapt to changing times.

Thus, the implementation of digital learning at MTs Al Falah Jatirokeh has shown quite positive results, although improvements are still needed in terms of equitable distribution of facilities and teacher training (Purwadi et al., 2024). Digital transformation in PAI learning is an urgent need, not only to adapt to technological developments but also to shape religious, critical, and adaptive students in the era of information disruption. An approach that combines technological mastery, pedagogical understanding, and Islamic character will be key to the success of PAI learning in the era of Society 5.0.

## **6. Conclusion**

This study concludes that the implementation of digital-based PAI learning at MTs Al Falah Jatirokeh is quite effective in addressing the challenges of the Society 5.0 era. This effectiveness is reflected in increased student participation and independence, understanding of the material, and the quality of interactions between teachers and students during the learning process. The use of various digital platforms such as Google Classroom, WhatsApp Group, Zoom, and visual media such as YouTube and Canva has proven to be able to support the delivery of abstract PAI material in a more concrete and engaging manner. Students show high enthusiasm when learning media is packaged interactively and contextually. However, this effectiveness is not fully equitable due to several obstacles such as limited digital devices, unstable internet access, and differences in technological competency among teachers. This gap indicates the need for greater attention to the readiness of infrastructure and human resources in madrasas. In the context of implementation, madrasas need to map teacher competencies, specifically differentiating coaching strategies between senior and junior teachers so that adaptation to technology can be effective. Improving digital literacy, providing ICT facilities, and supporting the development of learning media relevant to the characteristics of the digital generation are strategic steps that must be implemented simultaneously. Regional governments and the Ministry of Religious Affairs are expected to play an active role in supporting the digital infrastructure needs of madrasas. This study's limitations include its limited scope to a single madrasah and its failure to incorporate a quantitative approach to statistically strengthen its effectiveness analysis. Future research is recommended to involve more participants and employ mixed methods to provide more comprehensive results and inform Islamic value-based digital education policymaking.

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***Data Disclosure Statement***

The data that support the findings of this study are available from the corresponding author upon reasonable request.



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